
GPS AutoSteer System

Installation Manual



Supported Vehicles

John Deere

8100T	8110T	8120T	
8200T	8210T	8220T	8230T
8300T	8310T	8320T	8330T
8400T	8410T	8420T	8430T
		8520T	
9300T		9320T	
9400T		9420T	9430T
		9520T	9530T
		9620T	9630T

LEGAL DISCLAIMER

Note: Read and follow ALL instructions in this manual carefully before installing or operating the AutoSteer system.

Note: Take careful note of the safety information in the Safety Information section and throughout this manual.

The manufacturer disclaims any liability for damage or injury that results from failure to follow the instructions and warnings set forth herein.

Please take special note of the following warnings:

1. There is NO obstacle avoidance system included in the manufacturer's product. Therefore, users must always have an operator on the equipment when the AutoSteer system is in use to look for any obstacles including people, animals, trees, ditches, buildings, etc.
2. During installation of the AutoSteer system and during the Calibration and Tuning processes the vehicle will pivot from side to side on its tracks. Be sure that all people and obstacles are clear of the vehicle before installation, calibration and tuning, or use of the AutoSteer system.
3. Use of the AutoSteer system is NOT permitted while the vehicle is on public roads or in public areas. Ensure that the system is OFF before driving on roads or in public areas.

Special Requirements

Tools

This list consists of the tools required to complete the installation. The installer is assumed to have a complete set of common installation tools.

5mm Allen wrench	T15 socket and ratchet	8mm socket and ratchet
3/8" open wrench	#2 Phillips screwdriver	10mm socket and ratchet
9/16" open wrench	#3 Phillips screwdriver	13mm socket and ratchet
9/16" socket and ratchet	Side cutters	17mm socket and ratchet
15/16" socket and ratchet	Cleaning brush	Tape measure 12 ft (3.6 m) minimum
10 foot (3 meter) step ladder	Cleaning rags	Fiberglass Cable Puller
Electrical tape		

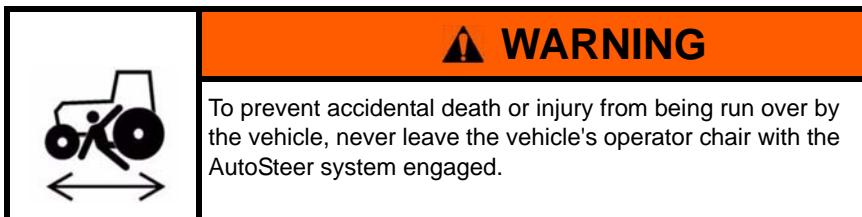
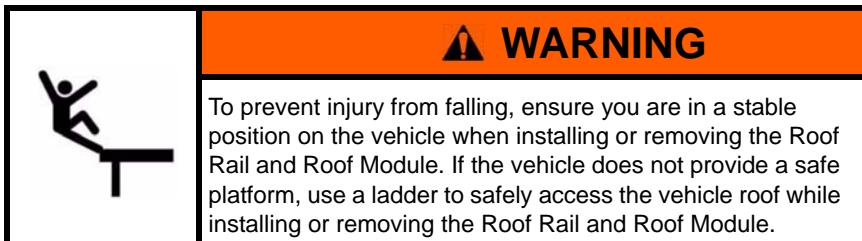
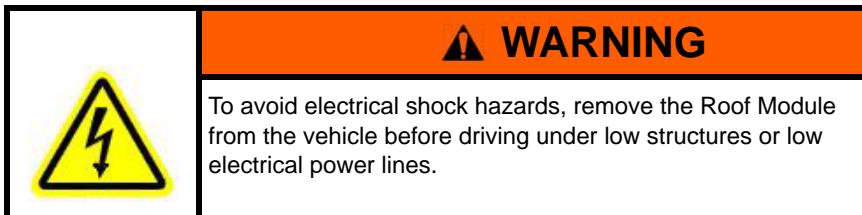
Safety Information

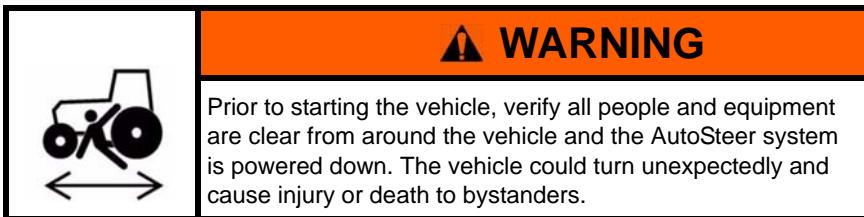
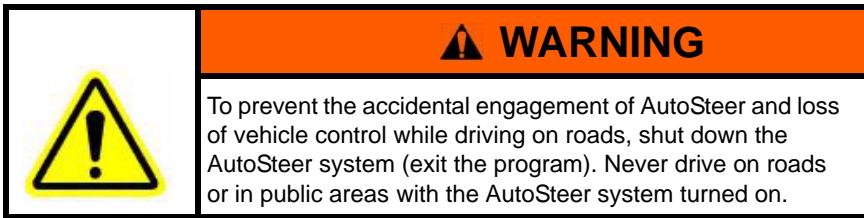
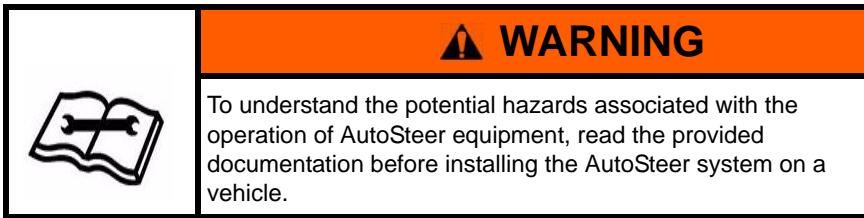
Warning Alerts

The AutoSteer system installer and manufacturer disclaim any responsibility for damage or physical harm caused by failure to adhere to the following safety requirements:

- As the operator of the vehicle, you are responsible for its safe operation.
- The AutoSteer system is *not* designed to replace the vehicle's operator.

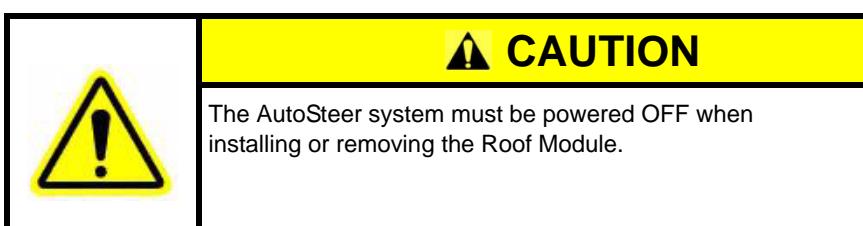
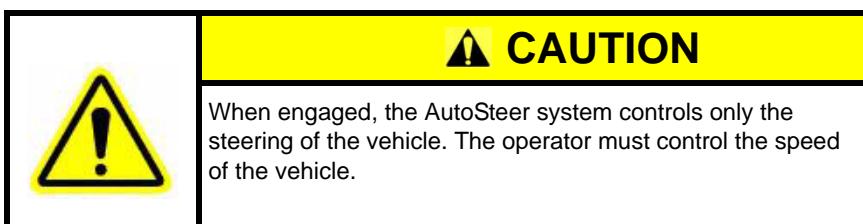
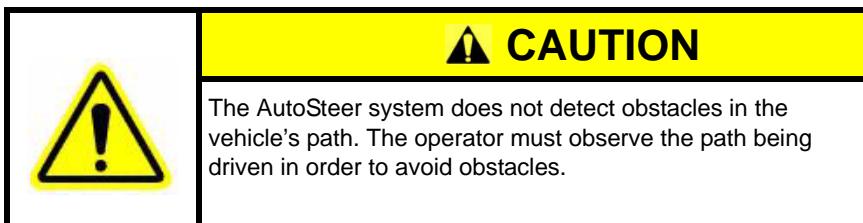
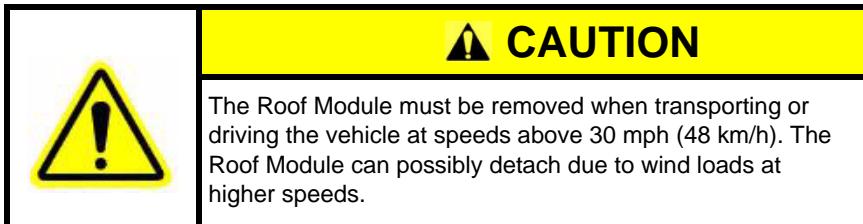
Note: Verify that all screws, bolts, nuts, and cable connections are tight after the final installation of the AutoSteer system on the vehicle.

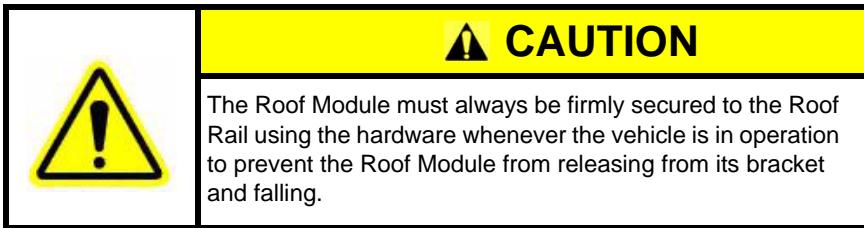




Caution Alerts

The AutoSteer system installer and manufacturer disclaim any responsibility for damage or physical harm caused by failure to adhere to the following safety requirements:





Vehicle Requirements

The vehicle steering and hydraulic systems must be in good working order before installing the AutoSteer system. Check for loose or worn parts. Drive the vehicle and confirm that it steers straight and the vehicle turns proportionally to the left and right.

The vehicle electrical system and battery must be in good working order.

The vehicle should be fully cleaned before installing the AutoSteer system. A clean vehicle will improve the overall installation and cable routing.

Important Information

This installation manual contains valuable information for servicing the AutoSteer system. After the installation is complete, store this manual in a safe place for future reference.

Note: Verify that all screws, bolts, nuts, and cable connections are tight after the final installation of the AutoSteer system on the vehicle.

Technical Support

Refer to your Display user manual for technical support information.

Contact Information

Refer to your Display user manual for contact information.

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Installation Overview

This **Installation Overview** chapter contains the kit overview diagram, part numbers, the installation procedure, and the cabling diagram in the following sections:

- *Vehicle Inspection*
- *Kit Assembly*
- *Installation Procedure Outline*
- *Cable Diagram*

This AutoSteer installation kit and manual will work on several series and models of John Deere tracked vehicles. These vehicles include:

- 8X00T series (8100T, 8200T, 8300T, and 8400T)
- 8X10T series (8110T, 8210T, 8310T, and 8410T)
- 8X20T series (8120T, 8220T, 8320T, 8420T, and 8520T)
- 8X30T series (8230T, 8330T, and 8430T)
- 9X00T series (9300T and 9400T)
- 9X20T series (9320T, 9420T, 9520T, and 9620T)
- 9X30T series (9430T, 9530T, and 9630T)

The AutoSteer installation kit PN: 188-0002-01 is used on this vehicle series. The vehicle specific sub-assemblies for the vehicle series are listed in *Table 1-1*.

Vehicle Inspection

The vehicle's steering system must be in good working condition prior to the installation of the AutoSteer system. Verify the existing steering system is operating correctly by performing the tests listed below in a wide open area.

Note: The steering system test requires a relatively large area. Ensure you have enough room to perform the test before beginning.

1. Drive the vehicle in a low gear and slowly turn the steering wheel all the way to the left. The vehicle should steer to the left at a steadily increasing rate until it is making a sharp left turn.
2. Drive the vehicle in a low gear and slowly turn the steering wheel all the way to the right. The vehicle should steer to the right at a steadily increasing rate until it is making a sharp right turn.

Note: The change in steering speed should mirror the speed and angle when turning left or right.

3. On flat terrain, drive the vehicle in a straight line in a low gear and release the steering wheel. The vehicle and steering wheel should spring back to the center position and continue to drive straight after releasing the wheel without drifting right or left.
4. Ask the vehicle driver or owner if they have experienced any vehicle steering problems. The operator should report no steering problems.

If the vehicle passes the four tests, proceed with the AutoSteer system installation. If the vehicle fails one or more of the tests, the steering system must be evaluated by a dealer and repaired if necessary.

Possible causes of steering problems:

- Incorrect track tension
- Electrical problem
- Hydraulic problem

Kit Assembly

This Kit Assembly is shown in *Figure 1-1* and its components are defined in *Table 1-1*.

Figure 1-1 John Deere Track Vehicle Kit Components (PN: 188-0002-01)

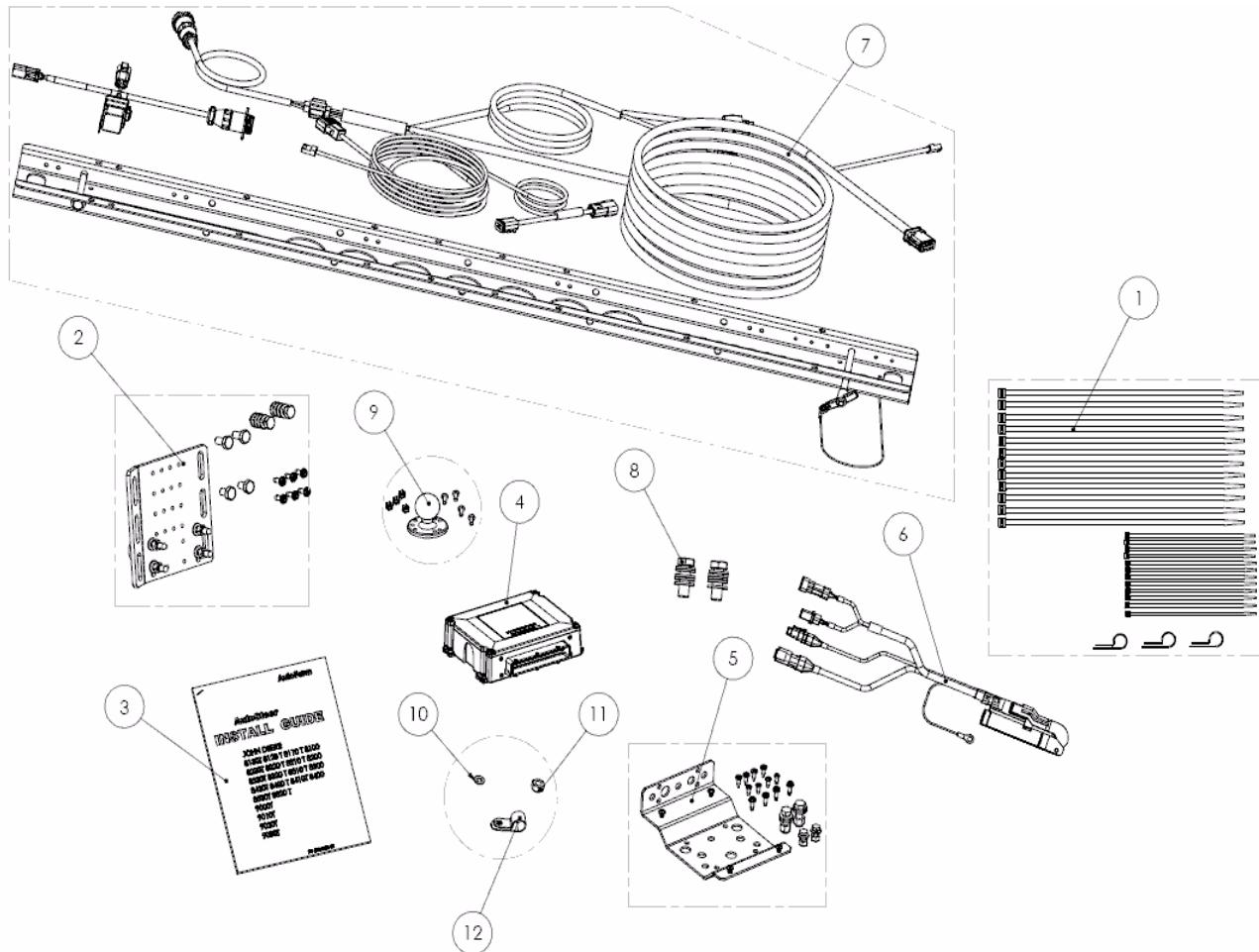


Table 1-1 Installation Kit Components (PN: 188-0002-01)

Item	Component	Part Number
1.	Mounting Hardware	200-0076-01
2.	Display Bracket	200-0469-02
3.	Installation Guide	602-0190-01
4.	SA Module Assembly	200-0207-01
5.	SA Module Bracket	200-0190-01
6.	SA Module Harness	201-0160-02

Item	Component	Part Number
7.	Common Assembly Kit	200-0497-02
8.	Roof Module Bolts	200-0238-01
9.	Display RAM Mount Base	200-0508-01
10.	M8 Flat Washer	517-0002-01
11.	M10 Lock Nut	519-0013-01
12.	Metal Wire Clamp	NX02649

Installation Procedure Outline

1. Verify that all components have been received.

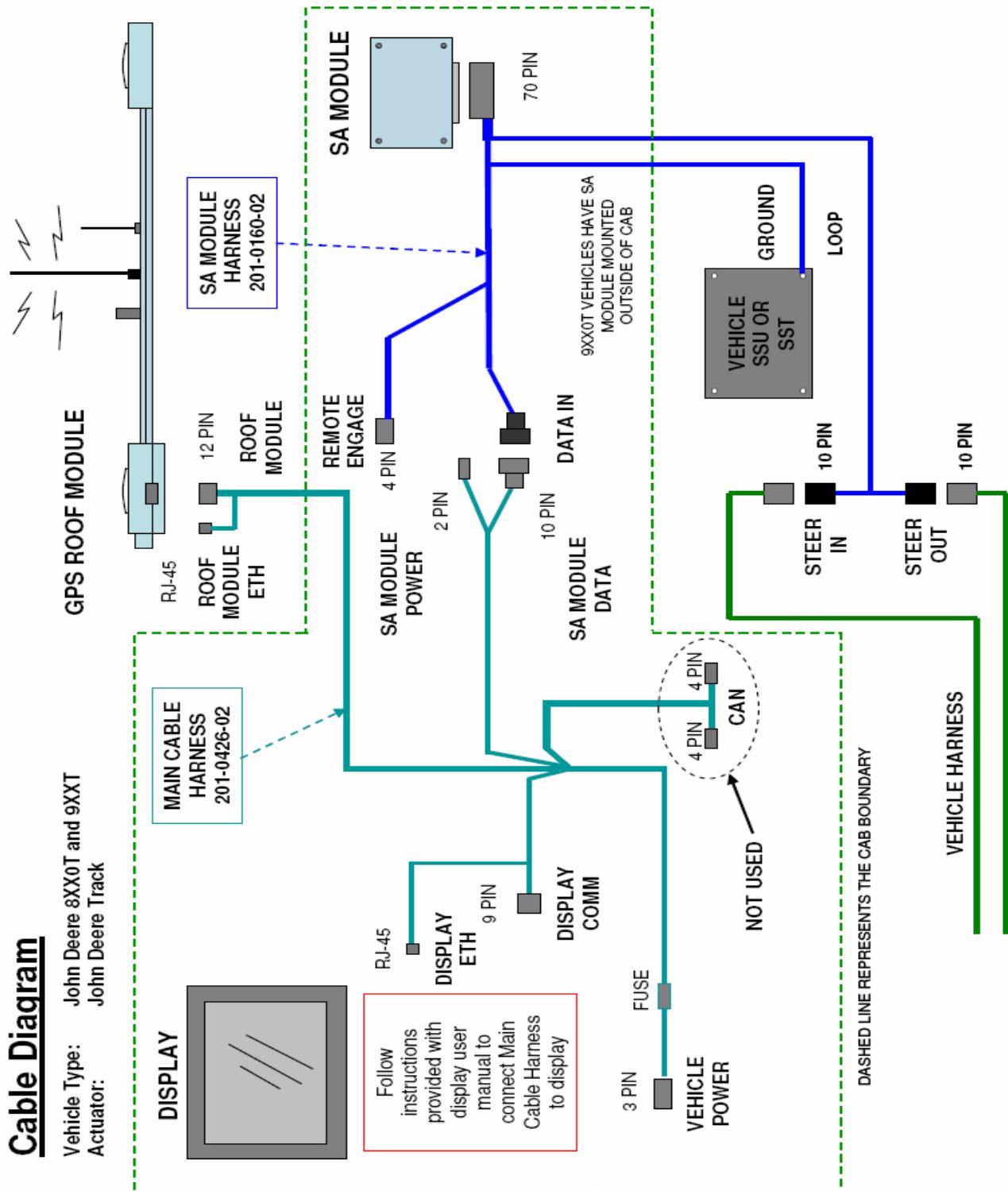
Note: Step 2 and Step 6 are skipped if installing an electric steering actuator.

2. Install the SA Module.
3. Install the Roof Rail on the cab roof.
4. Install the Roof Module on the Roof Rail.
5. Install the Display Mounting bracket in the cab.
6. Install the SA Module Harness.
7. Install the Main Cable Harness.
8. Install the Display using a RAM Mount Arm.
9. Connect the Main Cable Harness to the Display connectors.

Note: Instructions for connecting the vehicle kit cables to the Display can be found in the Display user manual.

10. Verify that all connectors are properly coupled and secured.
11. Start the vehicle and check for oil leaks.
12. Power ON the AutoSteer system.
13. Calibrate the vehicle.
14. Tune the vehicle.
15. Verify that the AutoSteer system has been installed properly and operates satisfactorily.

Cable Diagram



SA Module Installation

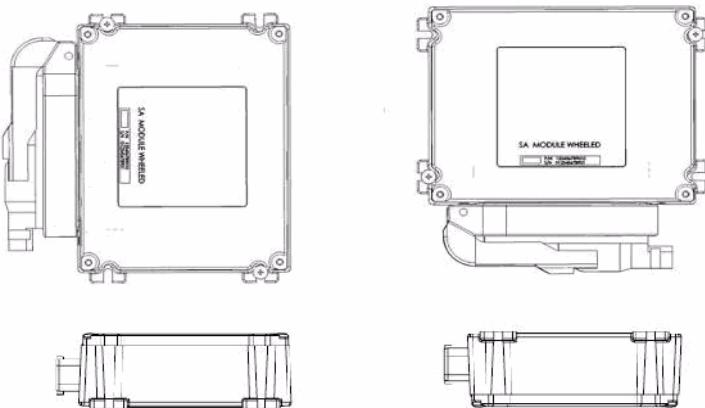
This **SA Module Installation** chapter contains information in the following sections:

- *SA Module Mounting Orientation*
- *Mount the SA Module*
 - *8X00T and 8X10T Series*
 - *8X20T Series*
 - *8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*

SA Module Mounting Orientation

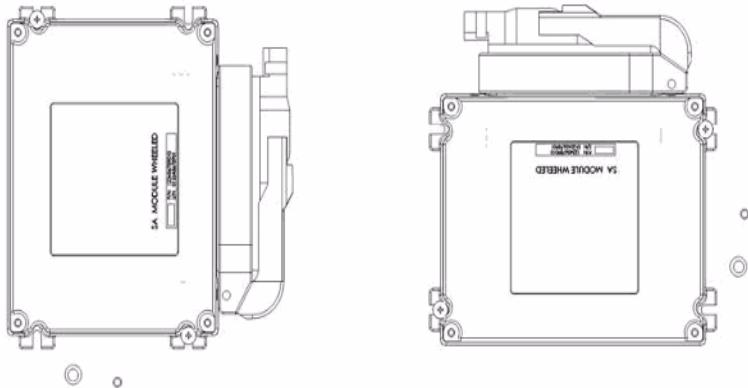
The SA Module can only be mounted in certain orientations. *Figure 2-1* shows the correct mounting positions and *Figure 2-2* shows incorrect mounting positions.

Figure 2-1 Correct SA Module Mounting Orientations



Mount the SA Module

Figure 2-2 Incorrect SA Module Mounting Orientations



Mount the SA Module

Due to the variety of options available on vehicles and the possible configuration differences, it may be necessary to install the SA Module in a location other than the example shown here. If an alternative location is required, choose a location where the SA Module can be protected from damage, from moving parts or crop debris, and excessive moisture from weather and cleaning equipment.

There are different mounting locations based on the vehicle series:

- *8X00T and 8X10T Series*
- *8X20T Series*
- *8X30T Series*
- *9X00T, 9X20T, and 9X30T Series*

8X00T and 8X10T Series

1. Locate the seat support bolt on the left side of the bottom of the operators seat. See *Figure 2-3*.

Figure 2-3 8X00T/8X10T SA Module Mounting Location



Seat Support Bolt

2. Remove the bolt with a 13mm socket and ratchet.
3. Start two of the mounting screws on the ‘L’ side of the SA Module Bracket. See *Figure 2-4*.
4. Attach the SA Module Bracket using the same bolt from Step 2 and tighten. See *Figure 2-4*.

Figure 2-4 8X00T/8X10T SA Module Bracket



Mounting Bolt

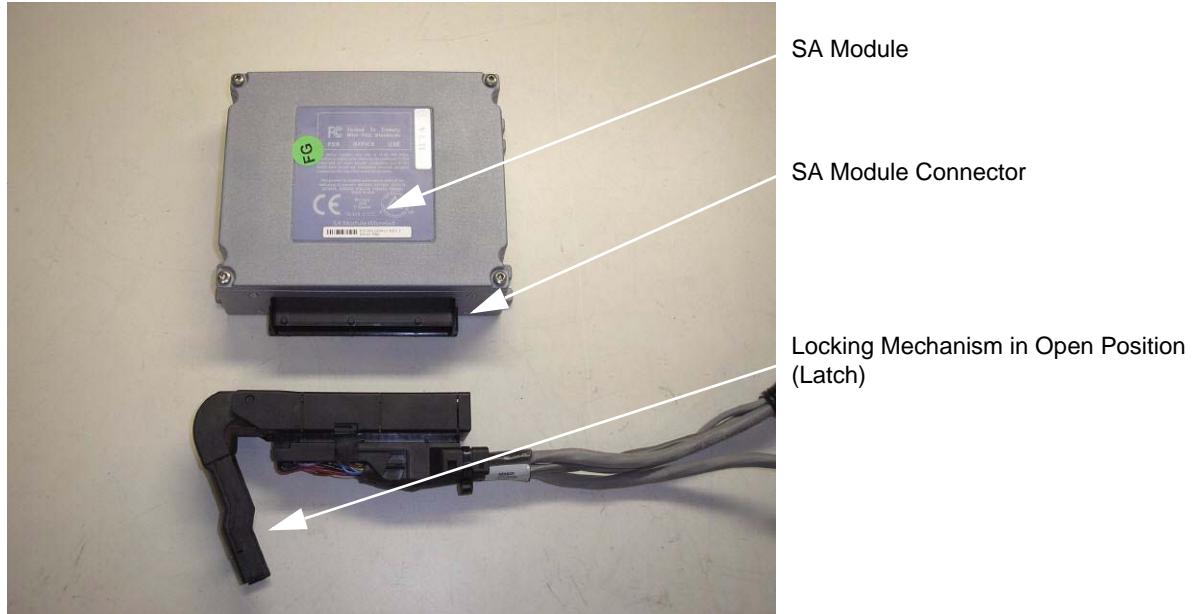
SA Module Bracket

Mounting Screws

Mount the SA Module

5. Align the SA Module Harness connector to the SA Module. See *Figure 2-5*.
6. Open the connector latch lever. See *Figure 2-5*.

Figure 2-5 Connecting SA Module Connector



7. Press the SA Module Harness connector onto the SA Module connector.

Note: You can damage the connectors if you force them into position. Do not force them together or use tools.

8. Press the latch lever closed until it clicks and locks the connector. See *Figure 2-6*.

Figure 2-6 Closing the SA Module Connector



Note: If you need to disconnect the SA Module connector, you must open the latch lever before attempting to pull the connectors apart.

Mount the SA Module

9. Close the cable connector locking mechanism as shown in *Figure 2-7*.

Figure 2-7 SA Module Connector (closed)



10. Attach the SA Module to the SA Module Bracket and secure with the other two screws provided. Tighten the screws with a #2 Phillips screwdriver. See *Figure 2-8*.

Figure 2-8 SA Module Mounted



8X20T Series

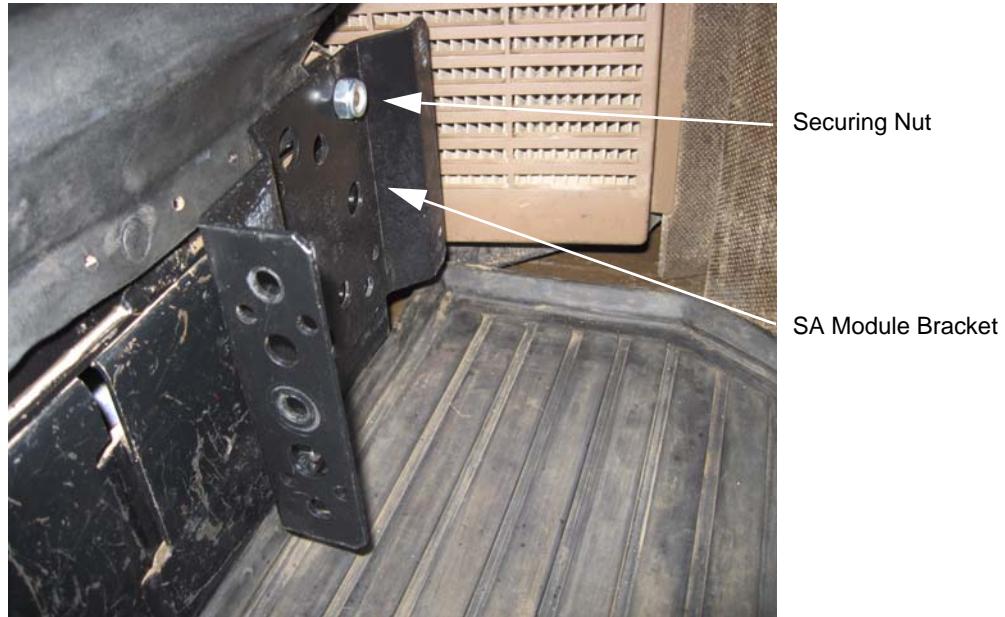
1. Locate the exposed bolt on the left side of the bottom of the operators seat. See *Figure 2-9*.

Figure 2-9 8X20T SA Module Mounting Location



2. Start two of the mounting screws on the "L" side of the SA Module Bracket.
3. Attach the SA Module Bracket to the bolt with a M10 lock nut. Tighten the nut with a 17mm socket and ratchet. See *Figure 2-10*.

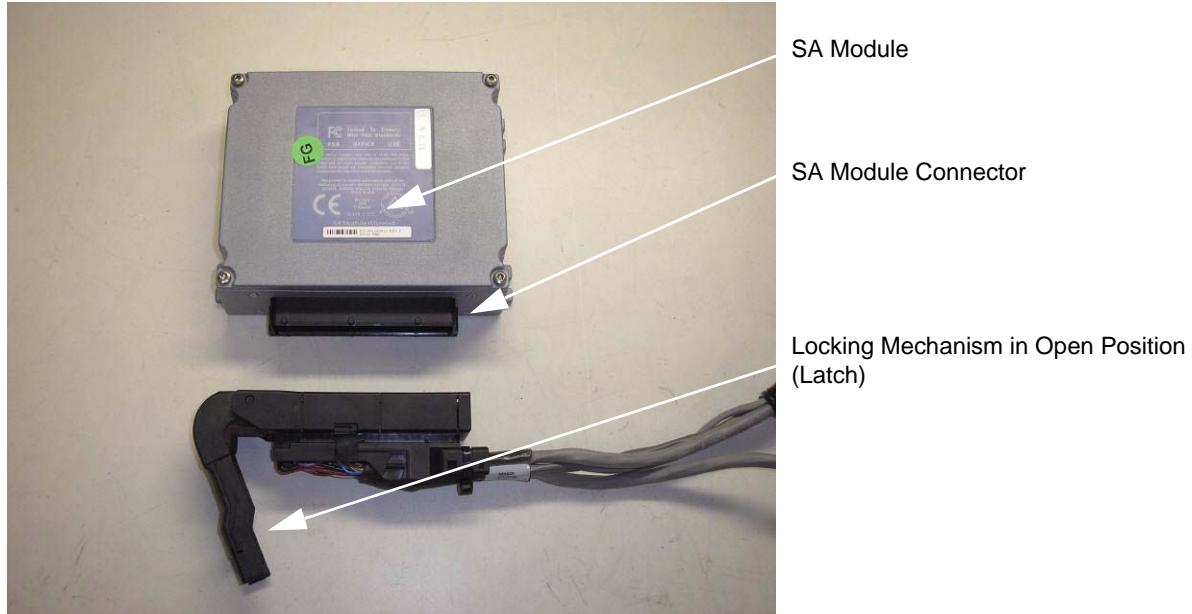
Figure 2-10 8X20T SA Module Bracket



Mount the SA Module

4. Align the SA Module Harness connector to the SA Module. See *Figure 2-11*.
5. Open the connector latch lever. See *Figure 2-11*.

Figure 2-11 Connecting SA Module Connector



6. Press the SA Module Harness connector onto the SA Module connector.

Note: You can damage the connectors if you force them into position. Do not force them together or use tools.

7. Press the latch lever closed until it clicks and locks the connector. See *Figure 2-12*.

Figure 2-12 Closing the SA Module Connector



Note: If you need to disconnect the SA Module connector, you must open the latch lever before attempting to pull the connectors apart.

Mount the SA Module

8. Close the cable connector locking mechanism as shown in *Figure 2-13*.

Figure 2-13 SA Module Connector (closed)



9. Attach the SA Module to the SA Module Bracket and secure with the other two screws provided. Tighten the screws with a #2 Phillips screwdriver. See *Figure 2-14*.

Figure 2-14 SA Module Mounted



8X30T Series

1. Open the rear window and then remove the two rubber grommets. See *Figure 2-15*.

Figure 2-15 Rear Window Grommets



2. Open the fuse panel along the rear window ledge by pulling the panel towards the driver's seat. See *Figure 2-16*.

Figure 2-16 Removing Fuse Panel



Mount the SA Module

3. Remove the two screws holding the right rear cover panel. See *Figure 2-17*.

Figure 2-17 Removing Right Rear Cover Panel



4. Remove the left rear cover panel with a #3 Phillips screwdriver. See *Figure 2-18*.

Figure 2-18 Removing Left Rear Cover Panel



5. Pull the rear cab panel forward from the metal clips holding it and then up and out of the way. See *Figure 2-19*.

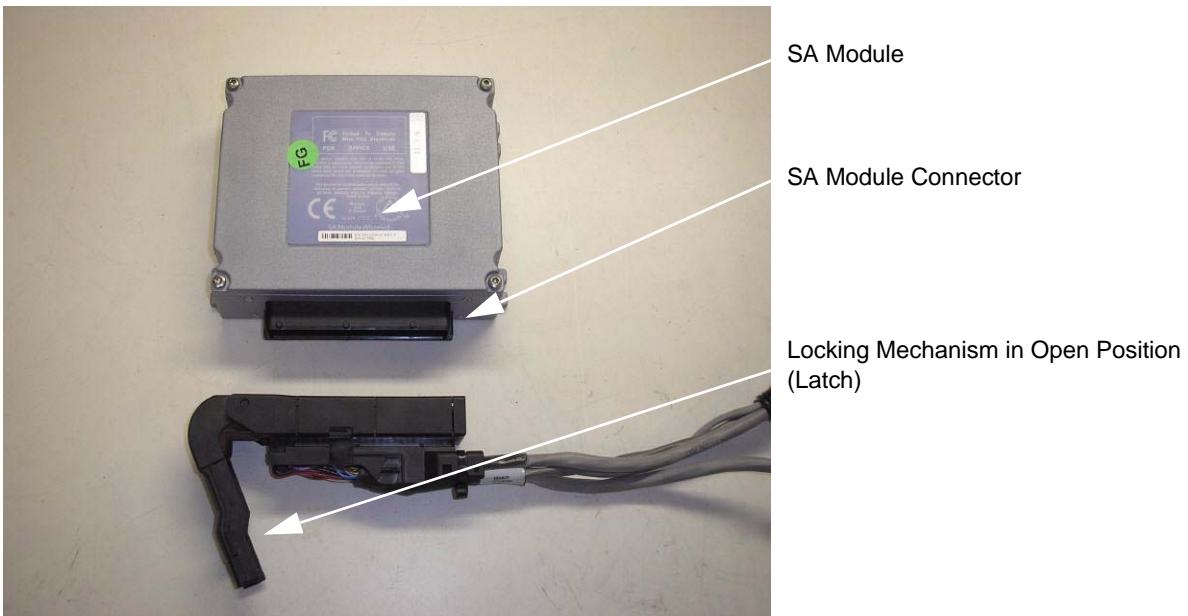
Figure 2-19 Rear Panel Removal



6. Align the SA Module Harness connector to the SA Module. See *Figure 2-20*.

7. Open the connector latch lever. See *Figure 2-20*.

Figure 2-20 Connecting SA Module Connector



Mount the SA Module

8. Press the SA Module Harness connector onto the SA Module connector.

Note: You can damage the connectors if you force them into position. Do not force them together or use tools.

9. Press the latch lever closed until it clicks and locks the connector. See *Figure 2-21*.

Figure 2-21 Closing the SA Module Connector



Note: If you need to disconnect the SA Module connector, you must open the latch lever before attempting to pull the connectors apart.

10. Close the cable connector locking mechanism as shown in *Figure 2-22*.

Figure 2-22 SA Module Connector (closed)

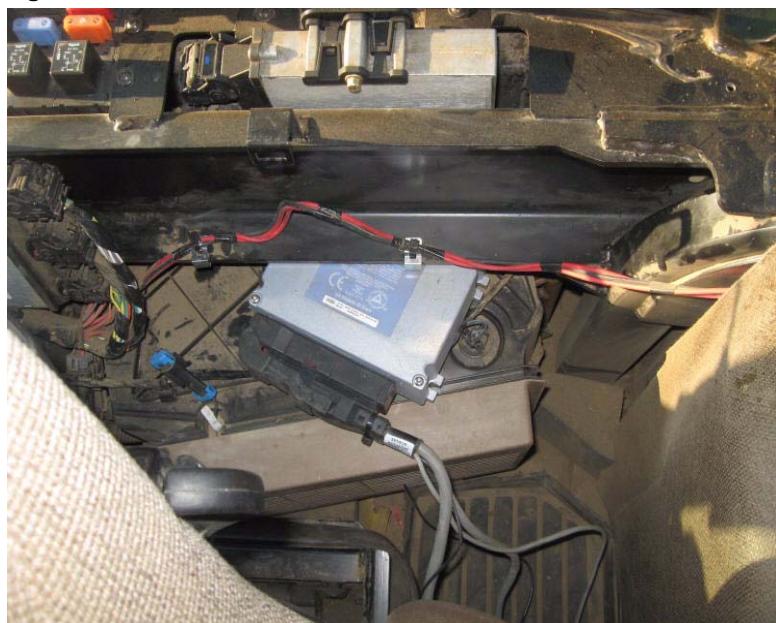


Mount the SA Module

11. Place the SA Module in the space above the air conditioner vent. See *Figure 2-23*.

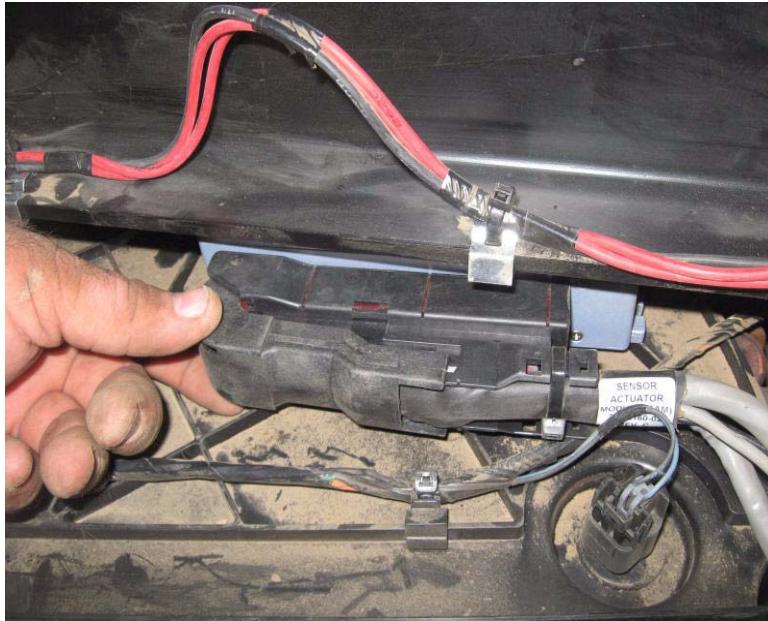
Note: The foam rubber from the rear panel will hold the SA Module from moving when everything is reinstalled.

Figure 2-23 SA Module Placement



12. Adjust the SA Module so it fits all the way under with the SA Module Harness pointing to the left side of the cab (right if you are facing backwards). See *Figure 2-24*.

Figure 2-24 Pushing SA Module Into Place



13. The SA Module has now been installed. Leave the compartment open until additional cables have been routed later in this installation process.

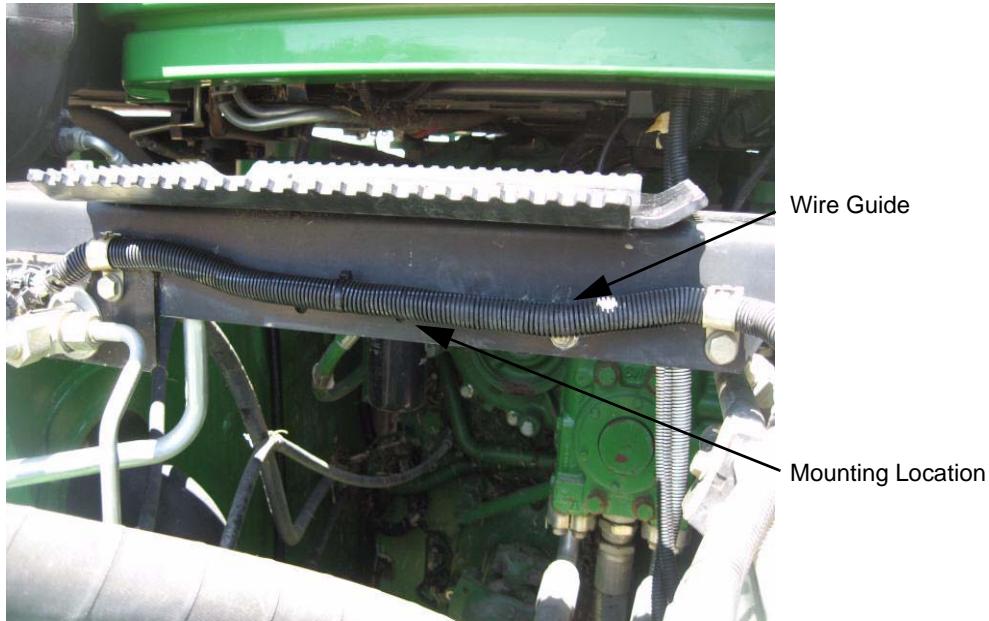
9X00T, 9X20T, and 9X30T Series

1. Locate the metal beam on the vehicle's rear which holds the step above and behind the valve stacks. See *Figure 2-25*.
2. Identify the hole in the step bracket for mounting the SA Module Bracket. See *Figure 2-25*.

Mount the SA Module

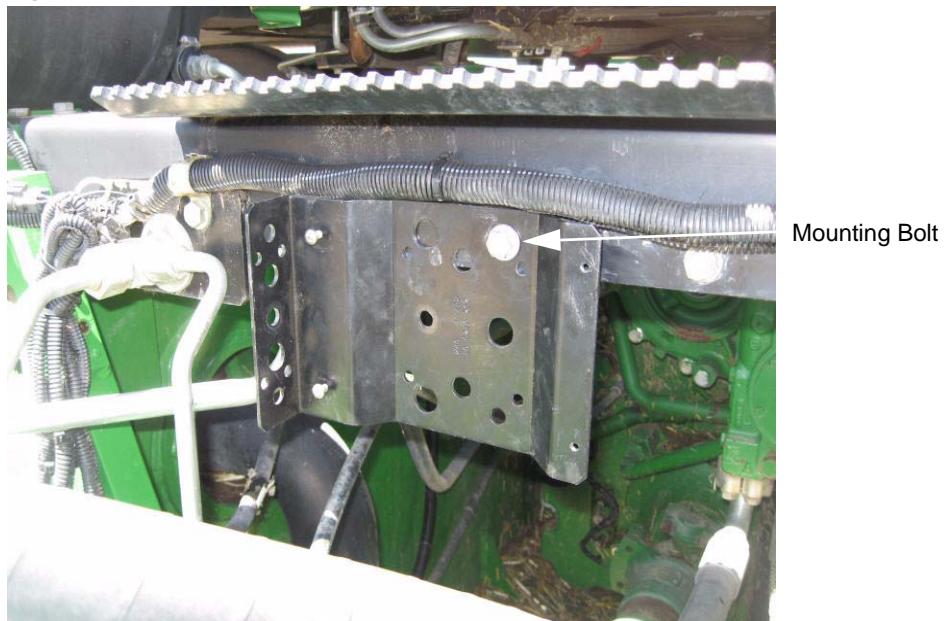
Note: The wire guide may need to be moved to locate the hole.

Figure 2-25 Metal Beam for Installing SA Module Bracket



3. Attach the SA Module Bracket with a 3/8" x 1-1/2" bolt, flat washers and lock nut. See *Figure 2-26*.
4. Tighten the bolt with a 9/16" wrench and 9/16" socket and ratchet. See *Figure 2-26*.

Figure 2-26 SA Module Bracket Mounted



5. Attach the SA Module to the SA Module bracket with four pan-head Phillips screws. Tighten the screws with a #2 Phillips screwdriver. See *Figure 2-27*.

Figure 2-27 SA Module Mounted



Mount the SA Module

Roof Module Installation

This **Roof Module Installation** chapter contains information in the following sections:

- *Safety Notes*
- *Roof Rail Installation*

Safety Notes

- The AutoSteer system must be powered OFF when installing or removing the Roof Module.
- The Roof Module must always be firmly secured to the Roof Rail using the hardware provided whenever the vehicle is in operation to prevent the Roof Module from releasing from its bracket and falling.
- The Roof Module must be removed when transporting the vehicle at speeds above 30 mph (48 km/h).
- Ensure you are in a stable position on the vehicle platform when removing the Roof Module so that you do not fall or drop the Roof Module.
- Use a ladder if needed to install the Roof Rail.



Roof Rail Installation

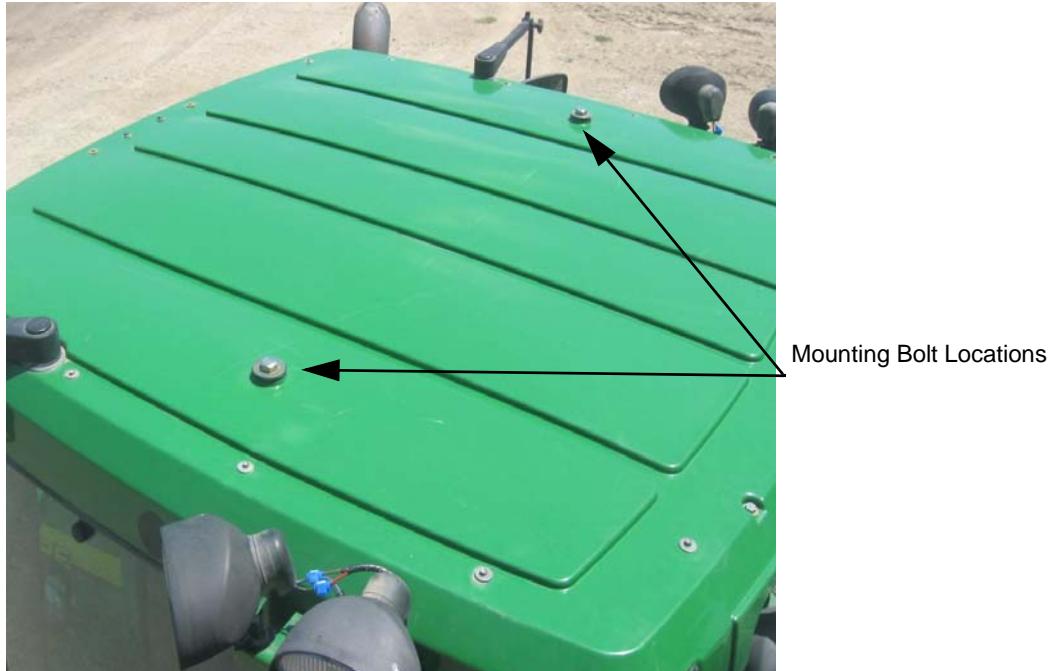
Note: The plastic roof moldings are slightly different between the various series of vehicles covered by this installation kit. Though the molding is different, the bolt pattern and mounting instructions are the same for all series. This installation pictures show the installation of the Roof Module on a typical 8X30 series vehicle.

1. Place the ladder as close as possible to the side of the cab.

Note: The ladder is necessary to install the Roof Rail and Roof Module.

2. Locate the two mounting bolts shown in *Figure 3-1* on the cab roof.

Figure 3-1 Mounting Bolt Locations



3. Remove the bolts with a 15/16" socket and ratchet. Leave the existing washer over the rubber gasket.
4. Place four of the flat washers provided with the installation kit on top of the existing washer on each of the bolt holes.
5. Place the Roof Rail on top of the washer stacks and center it over the cab. See *Figure 3-2*.

6. Place another flat washer on top of the Roof Rail and then attach the Roof Rail using the longer mounting bolts provided with the installation kit. See *Figure 3-2*.

Figure 3-2 Mount Roof Rail on Washers



7. Tighten the Roof Rail securely with a 15/16" socket, short extension, and ratchet. See *Figure 3-3*.

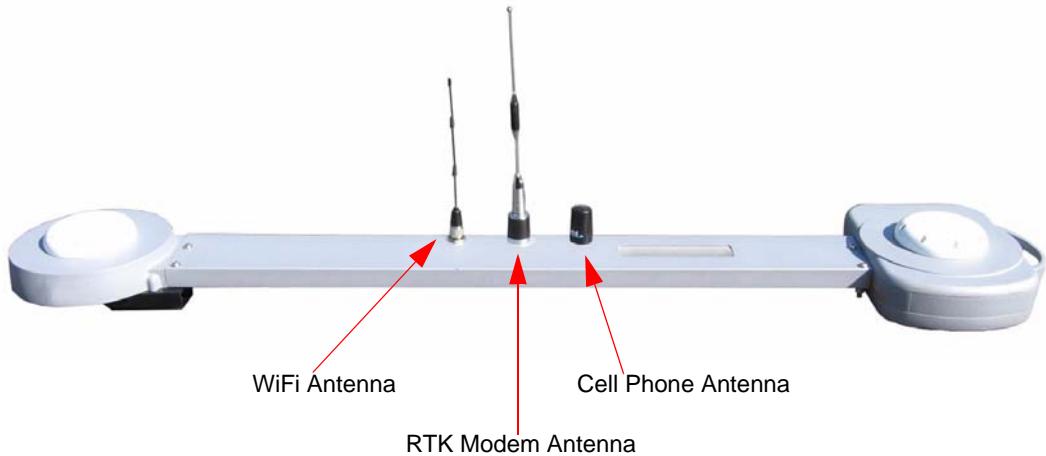
Figure 3-3 Tighten Roof Rail Bolts



8. Attach the three antennas to the proper antennas connections on the Roof Module. See *Figure 3-4*.

Note: Hand tighten the connections. Do not over tighten.

Figure 3-4 Attach the Antennas



9. Remove the Locking Pin from the Roof Rail. See *Figure 3-5*.

Figure 3-5 Removing the Locking Pin



10. Place the Roof Module on the Roof Rail. See *Figure 3-6*.

Figure 3-6 Roof Module on Roof Rail



11. Re-insert the Locking Pin to lock the Roof Module onto the vehicle. See *Figure 3-7*.

Figure 3-7 Locking Pin Inserted



Note: The Locking Pin can be inserted from either side of the Roof Rail.

12. Bend the radio antenna forward and latch in the antenna clip to hold it from rubbing on the Roof Module. See *Figure 3-8*.

Figure 3-8 Latching Radio Antenna



13. The completed Roof Module is shown in *Figure 3-9*.

Figure 3-9 Roof Module Installed



Display Installation

This **Display Installation** chapter contains Display information in the following sections:

- *Introduction*
- *Installation Procedure*
 - *8X00T, 8X10T, 8X20T, 8X30T, and 9X30T Series*
 - *9X00T and 9X20T Series*

Introduction

This chapter provides the instructions for installing the RAM Mount Ball in the cab so the Display can be attached later. Refer to your Display user manual for instructions on installing the Display.

Note: If the holes shown for mounting the Display are being used by another piece of equipment, other mounting locations can be used.

Installation Procedure

There are multiple types of Display installation depending on the vehicle series:

- *8X00T, 8X10T, 8X20T, 8X30T, and 9X30T Series*
- *9X00T and 9X20T Series*

8X00T, 8X10T, 8X20T, 8X30T, and 9X30T Series

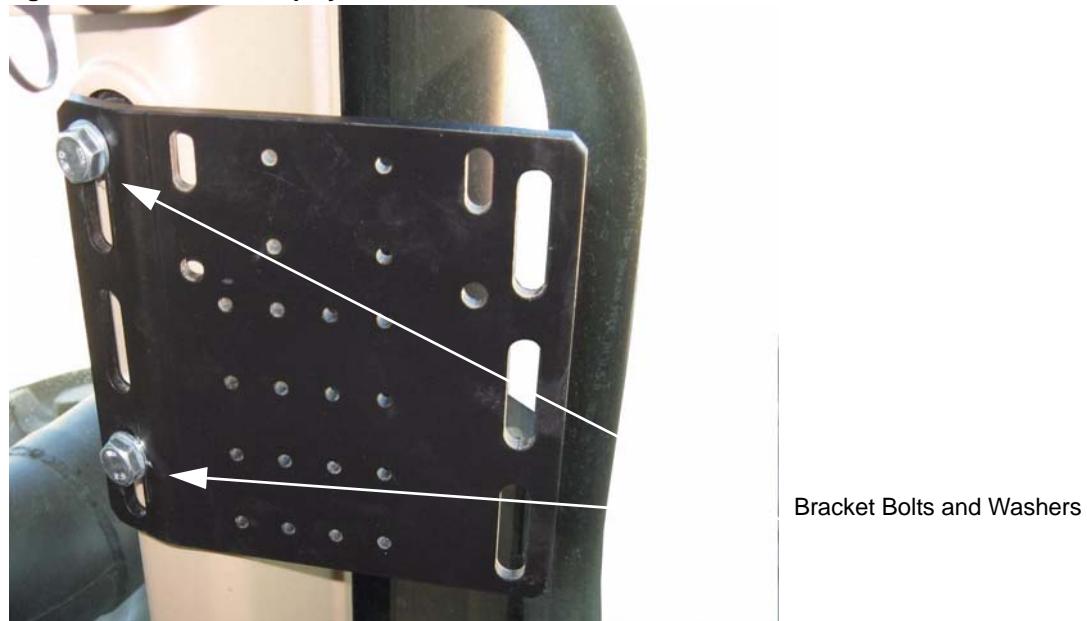
1. Locate the accessory mounting bracket holes on the front right corner cab post. If necessary, unscrew the threaded plastic hole caps from the cab post. See *Figure 4-1*.

Figure 4-1 Display Bracket Mounting Holes



2. Attach the Display bracket to the mounting holes with the two M10 x 20mm bolts and washers that are included with the installation kit. The bracket should attach so it angles back towards the side window. See *Figure 4-2*. Tighten the bracket with a 17mm socket and ratchet.

Figure 4-2 Mounted Display Bracket



3. Attach the RAM Mount Ball to the mounting bracket using the four 10-32x3/4 Phillips screws and lock nuts provided. Tighten using a 3/8" wrench and #2 Phillips screwdriver See *Figure 4-3*.

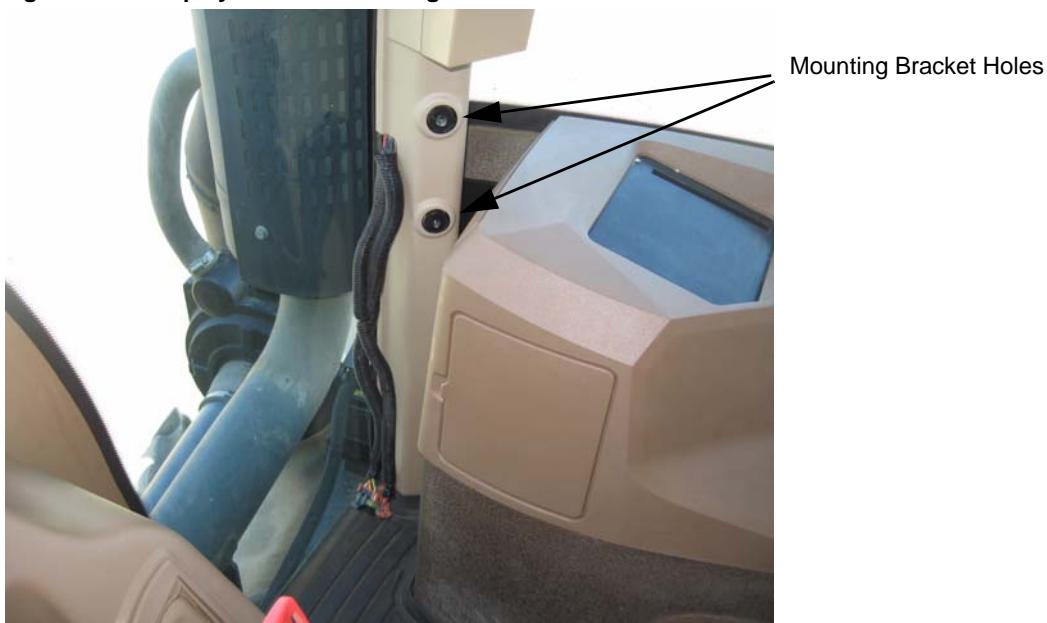
Figure 4-3 Mounted RAM Ball



9X00T and 9X20T Series

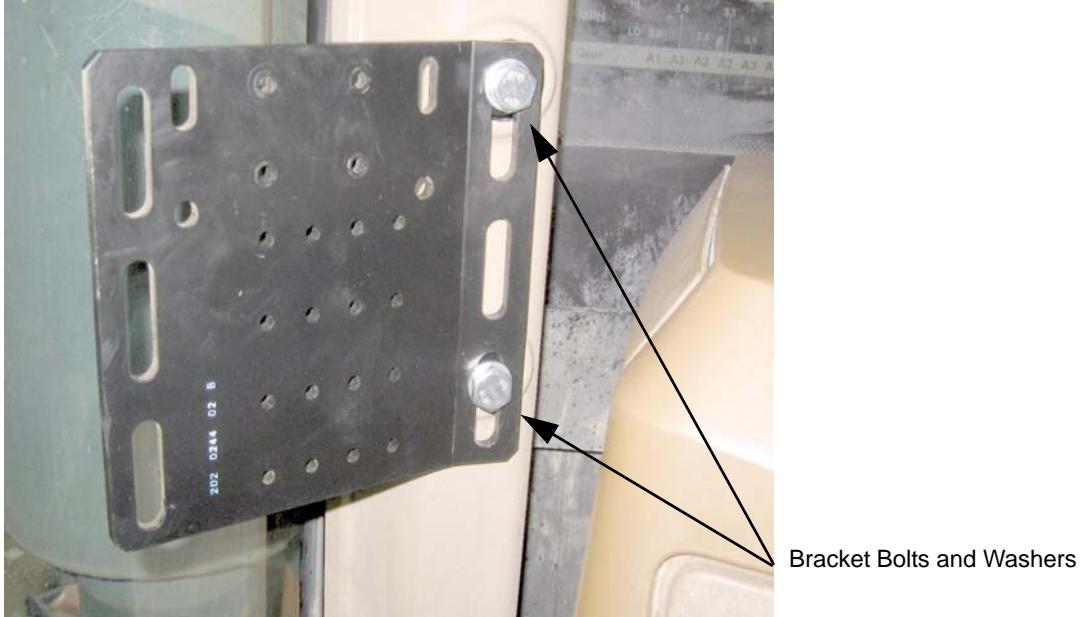
1. Locate the accessory mounting bracket holes on the front right corner cab post. If necessary, unscrew the threaded plastic hole caps from the cab post. See *Figure 4-4*.

Figure 4-4 Display Bracket Mounting Holes



2. Attach the Display bracket to the mounting holes with the two M10 x 20mm bolts and washers that are included with the installation kit. The bracket should attach so it angles back towards the side window. See *Figure 4-5*. Tighten the bracket with a 17mm socket and ratchet.

Figure 4-5 Mounted Display Bracket



3. Attach the RAM Mount Ball to the mounting bracket using the four 10-32x3/4 Phillips screws and lock nuts provided. Tighten using a 3/8" wrench and #2 Phillips screwdriver See *Figure 4-6*.

Figure 4-6 Mounted RAM Ball



Connecting System Cables

This **Connecting System Cables** chapter provides information in the following sections:

- *SA Module Harness*
 - *Open Engine Access Panels*
 - *8X00T and 8X10T Series*
 - *8X20T Series*
 - *8X30T Series*
 - *Open Rear Access Panels*
 - *8X00T, 8X10T, 8X20T, and 8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
 - *SA Module Connections*
 - *8X00T, 8X10T, 8X20T, and 8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
 - *Vehicle Steer Connections*
 - *Route 8X00T, 8X10T, and 8X20T Series Cables*
 - *Route 8X30T Series Cables*
 - *Route 9X00T, 9X20T, and 9X30T Series Cables*
 - *Connecting Steer Connections*
 - *Grounding Wire Connections*
 - *Route 9X00T, 9X20T, and 9X30T Series Cables*
 - *8X20T Series*
 - *9X00T and 9X20T Series*
 - *8X30T and 9X30T Series*
- *Main Cable Harness*
 - *Roof Module*
 - *8X00T, 8X10T, and 8X20T Series*
 - *8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
 - *Main Cable Harness Connections Inside Cab*
 - *SA Module Harness*
 - *8X00T, 8X10T, and 8X20T Series*
 - *8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
- *Power Supply Connection*
 - *Cab Power Connection*
 - *Battery Power Connection*
 - *8X00T, 8X10T, 8X20T, and 8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*

SA Module Harness

This **SA Module Harness** section contains the following sub-sections:

- *Open Engine Access Panels*
 - *8X00T and 8X10T Series*
 - *8X20T Series*
 - *8X30T Series*
- *Open Rear Access Panels*
 - *8X00T, 8X10T, 8X20T, and 8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
- *SA Module Connections*
 - *8X00T, 8X10T, 8X20T, and 8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
- *Vehicle Steer Connections*
 - *Route 8X00T, 8X10T, and 8X20T Series Cables*
 - *Route 8X30T Series Cables*
 - *Route 9X00T, 9X20T, and 9X30T Series Cables*
 - *Connecting Steer Connections*
- *Grounding Wire Connections*
 - *Route 9X00T, 9X20T, and 9X30T Series Cables*
 - *8X20T Series*
 - *9X00T and 9X20T Series*
 - *8X30T and 9X30T Series*

The SA Module Harness connection procedure is similar for all vehicle models. Any differences are broken out per series. Use the specific instructions for the vehicle model where the AutoSteer system is to be installed.

Open Engine Access Panels

This **Open Engine Access Panels** section contains the following sub-sections:

- *8X00T and 8X10T Series*
- *8X20T Series*
- *8X30T Series*

8X00T and 8X10T Series

1. Identify the front left removable hood panel. *Figure 5-1.*
2. Pull the release lever forward and then slide the panel out from the rear latches. See *Figure 5-1.*

Figure 5-1 Hood Panel on 8X00T and 8X10T Series



3. The panel will be held by a safety cable. Move the panel out of the way and allow the cable to hold the panel.

4. Identify the screw near the engine where it holds the molding below the left side of the cab and remove the screw with a #2 Phillips screwdriver. See *Figure 5-2*.

Figure 5-2 Remove Front Molding Screw



5. Identify and remove the two screws holding the molding to the base frame of the left door with a #2 Phillips screwdriver. See *Figure 5-3*.

Figure 5-3 Remove Base Frame Molding Screws



6. Remove the molding from under the cab.

8X20T Series

1. Identify the hood latch on the left side of the hood. See *Figure 5-4*.

Figure 5-4 Hood Latch on 8X20T Series



2. Pull the latch down and then raise the vehicle's hood.
3. Remove the two Allen screws holding the side panel next to the cab with a 5mm Allen wrench. See *Figure 5-5*.

Figure 5-5 Remove Allen Screws



4. Remove the side panel.

8X30T Series

1. Identify the hood latch on the left side of the hood. See *Figure 5-6*.

Figure 5-6 Hood Latch on 8X30T Series



2. Pull the latch out and then raise the vehicle's hood.

Open Rear Access Panels

This **Open Rear Access Panels** section contains the following sub-sections:

- *8X00T, 8X10T, 8X20T, and 8X30T Series*
- *9X00T, 9X20T, and 9X30T Series*

8X00T, 8X10T, 8X20T, and 8X30T Series

Note: The 8X30T has a different shaped access panel than the earlier 8XX0T models. However the removal process for all models is the same. The manual pictures will show an 8X30T series vehicle.

1. Locate the rear access panel on the back of the vehicle. See *Figure 5-7*.



2. To remove the rear access panel, loosen the two bolts on the track-side of the both fenders with a 10mm socket and ratchet. *Figure 5-8* shows the right side bolts. The left side has two more bolts that also need to be loosened.

Note: The bolts do not need to be completely removed, just loosened.

Figure 5-8 Loosen Access Panel Fastener Bolts



Loosen Bolts on Both Sides (right side shown)

3. Once the bolts are properly loosened, the rear access panel will pull out and up. Remove the panel.
4. If they have not been removed yet, open the rear window and remove the rubber grommets as shown in *Figure 5-9*.

Figure 5-9 Remove Rubber Grommets



Rubber Grommets

9X00T, 9X20T, and 9X30T Series

1. Locate the vehicle rear access panel. See *Figure 5-10*.

Figure 5-10 Rear Access Panel



Rear Access Panel

2. Open the rear window and remove the two screws on top of the rear access panel with a #3 Phillips screwdriver. See *Figure 5-11*.

Figure 5-11 Rear Access Fastener Screws



Panel Screws

Right -side Grommet

3. Once the screws are removed, the rear access panel will pull out and up. Remove the panel
4. Remove the right side rubber grommets as shown in *Figure 5-11*.

SA Module Connections

This section provides **SA Module Connection** instructions for the following installations:

- *8X00T, 8X10T, 8X20T, and 8X30T Series*
- *9X00T, 9X20T, and 9X30T Series*

8X00T, 8X10T, 8X20T, and 8X30T Series

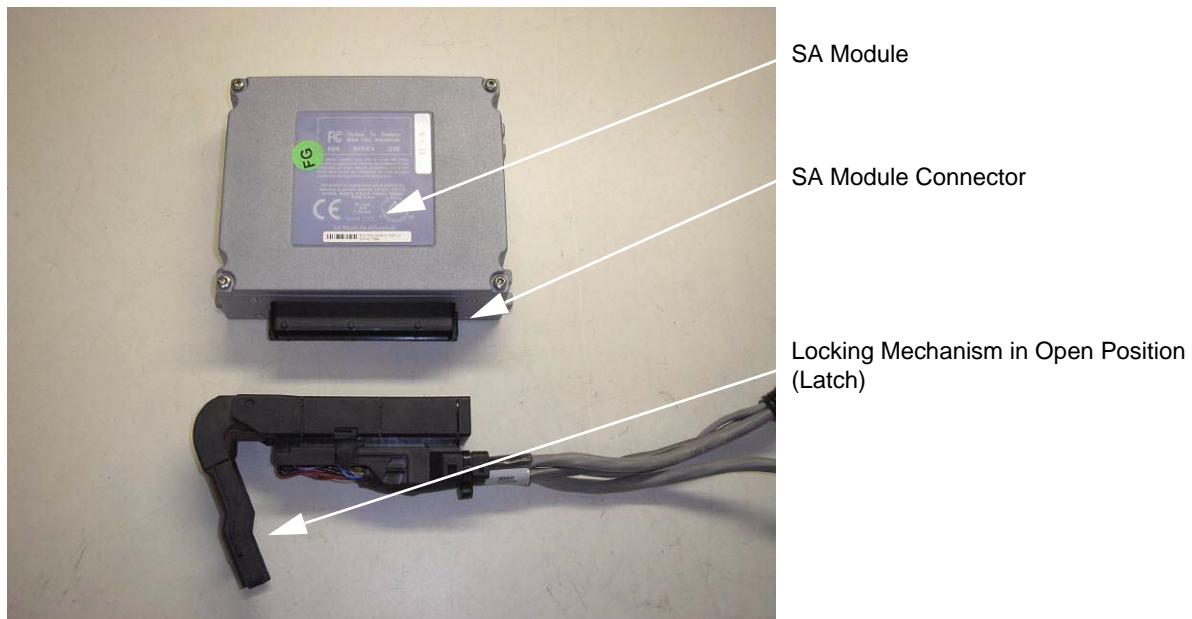
In order to facilitate the SA Module installation in an area that has no room to install this connector after the SA Module has been mounted, you should already have connected the SA Module Harness to the SA Module on these vehicles.

Note: See the *SA Module Installation* chapter for additional information.

9X00T, 9X20T, and 9X30T Series

1. Align the SA Module Harness connector to the SA Module. See *Figure 5-12*.
2. Open the connector latch lever. See *Figure 5-12*.

Figure 5-12 Connecting SA Module Connector



3. Press the SA Module Harness connector onto the SA Module connector.

Note: You can damage the connectors if you force them into position. Do not force them together or use tools.

4. Press the latch lever closed until it clicks and locks the connector. See *Figure 5-13*.

Figure 5-13 Closing the SA Module Connector



Note: If you need to disconnect the SA Module connector, you must open the latch lever before attempting to pull the connectors apart.

5. Close the cable connector locking mechanism as shown in *Figure 5-14*.

Figure 5-14 Latched SA Module Connector



Vehicle Steer Connections

This section provides **Vehicle Steer Connection** instructions for the following:

- *Route 8X00T, 8X10T, and 8X20T Series Cables*
- *Route 8X30T Series Cables*
- *Route 9X00T, 9X20T, and 9X30T Series Cables*
- *Connecting Steer Connections*

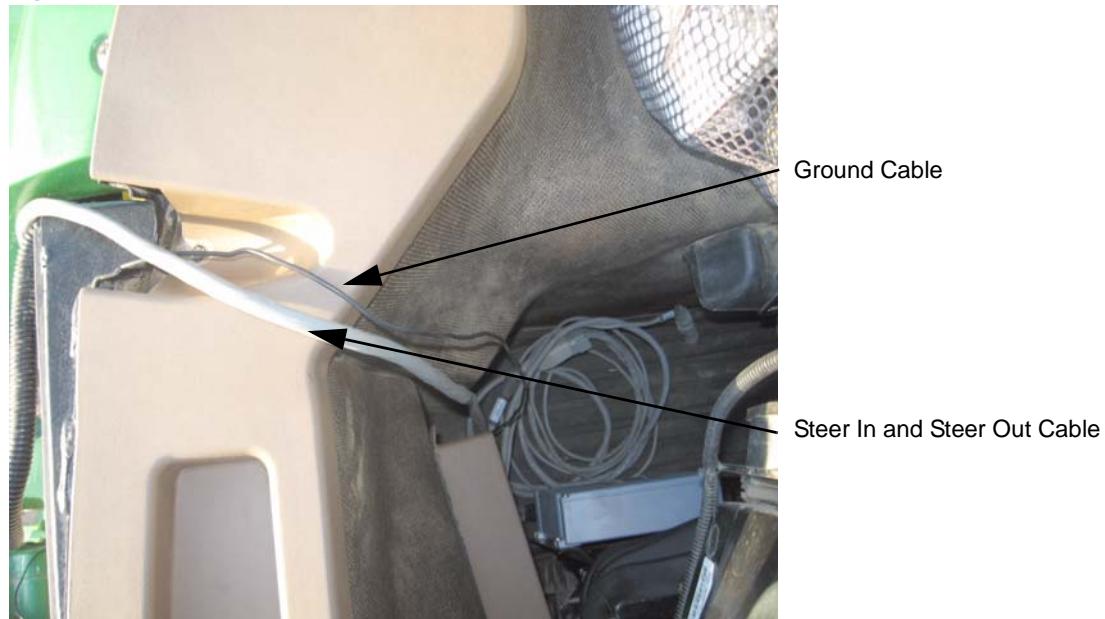
The AutoSteer system interfaces with the vehicle by teeing in between the vehicle's electrical steering connectors. These connectors are located below and in front of the cab and can be accessed from the left side of the vehicle. The physical connections themselves are the same for all series of vehicles. However, the procedure to access the area and the route the cable takes are slightly different for the various series. Use the specific instructions for the vehicle model where the AutoSteer system is to be installed.

Route 8X00T, 8X10T, and 8X20T Series Cables

1. Route the SA Module Harness's "Steer In" and "Steer Out" cables out the left rear cab wire access grommet hole as shown in *Figure 5-15*.

Note: The "Ground" cable should be run out the cab wire access grommet hole at the same time to be connected later.

Figure 5-15 Route Cables out Rear Cab Access Grommet



2. Route the Steer In and Steer Out connectors from the rear of the machine towards the front of the vehicle along the left side under the cab. See *Figure 5-16*.

Note: Keep the SA Module Harness on the inside of the cab support posts to provide the best protection.

Figure 5-16 Routing Steering Cables



SA Module Harness Cables

Cab Support

3. Route the Steer In and Steer Out connectors out from under the cab front left side. See *Figure 5-17*.

Figure 5-17 Routing Steering Cables Out Front



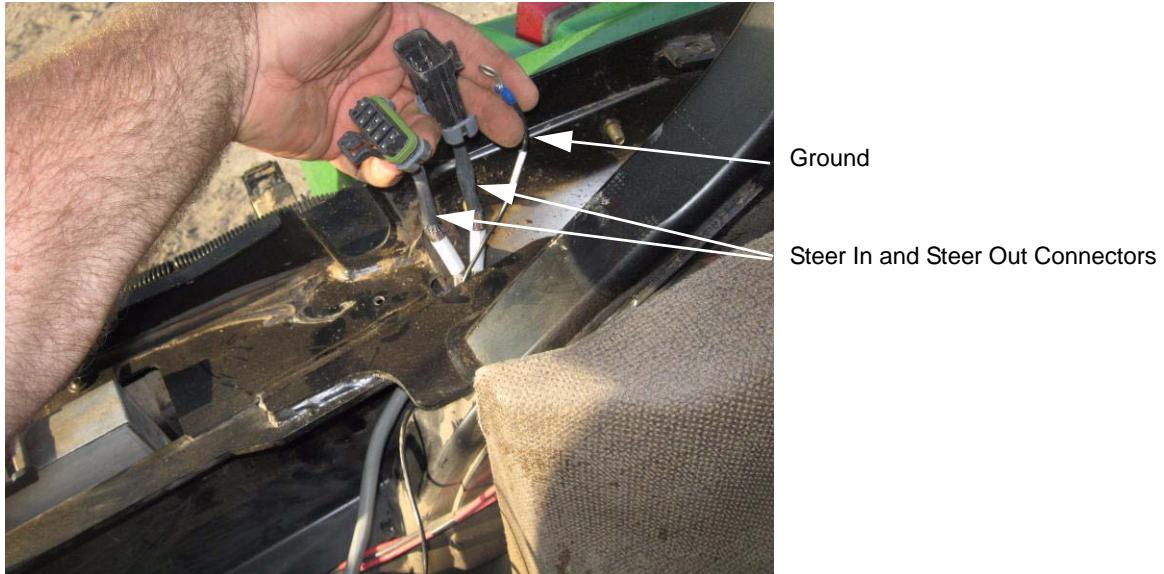
SA Module Harness Cables

Route 8X30T Series Cables

1. Feed the SA Module Harness Steer In and Steer Out cable up through the rear access panel area, under the tubing, and out the space in between the back of the cab and the tubing. See *Figure 5-18*.

Note: The “Ground” cable should be run out the cab wire access grommet hole at the same time to be connected later.

Figure 5-18 Feed SA Module Harness Cables Out of Cab



2. Route the Steer In and Steer Out connectors from the rear of the machine towards the front of the vehicle along the left side under the cab. See *Figure 5-19*.

Note: Keep the SA Module Harness on the inside of the cab support posts to provide the best protection.

Figure 5-19 Routing Steering Cables



SA Module Harness Cables

Cab Support

3. Route the Steer In and Steer Out connectors out from under the cab front left side. See *Figure 5-20*.

Figure 5-20 Routing Steering Cables Out Front



SA Module Harness Cables

Route 9X00T, 9X20T, and 9X30T Series Cables

1. Route the Steer In and Steer Out connectors from the rear of the machine towards the front of the vehicle along the left side under the cab. See *Figure 5-21*.

Note: Keep the SA Module Harness on the inside of the cab support posts to provide the best protection.

Figure 5-21 Routing Steering Cables



2. Route the SA Module Harness Steer In and Steer Out connectors out from under the cab front left side. See *Figure 5-22*.

Figure 5-22 Routing Steering Cables Out Front



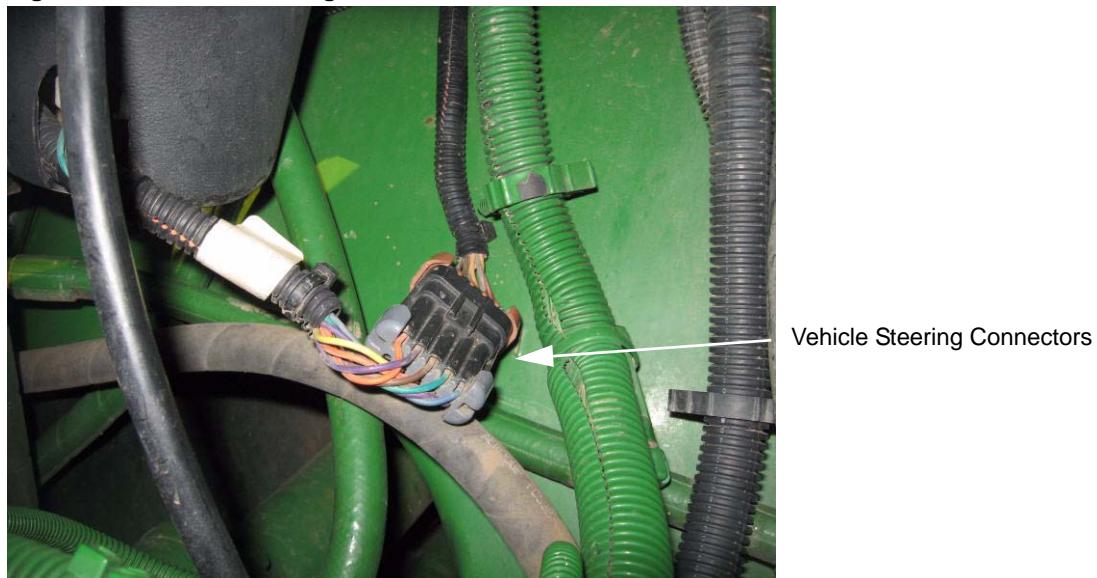
Connecting Steer Connections

Note: The pictures in this manual show the connections for an 8X30T series vehicle. The connectors and procedures are the same for all series of this vehicle type. However, the exact location of the connectors may appear slightly different than what is shown. All connectors will be accessible from the left side of the vehicle, in front of and below the front of the cab.

1. Locate the vehicle's steering harness connectors under the front, left side of the cab where the SA Module Steer In and Steer Out connectors where pulled out under the cab's front. See *Figure 5-23*.

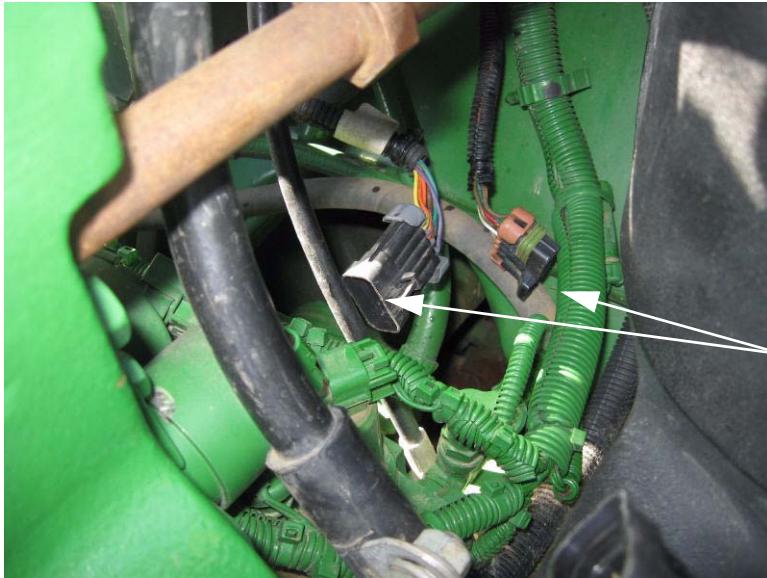
Note: The connector may be held with a zip tie and may need to be cut loose.

Figure 5-23 Vehicle Steering Connections



2. Separate the vehicle's steering connectors. See *Figure 5-24*.

Figure 5-24 Separated Vehicle Steering Connectors



Separated Steering Connectors

3. Connect the SA Module Harness's Steer In and Steer Out connectors between the existing vehicle steering connectors. See *Figure 5-25*.

Figure 5-25 SA Module Harness Connected to Vehicle Steering Connectors



Original Vehicle Steering Connectors

SA Module Harness Connectors

4. Secure the cable to the vehicle using zip ties so that it is not damaged by moving parts.
5. Coil and secure any excess cable neatly and securely under the cab.
6. Replace any panels or molding removed from the hood area and/or close the hood if it was opened.

Grounding Wire Connections

This section provides **Grounding Wire Connection** instructions for the following:

- *8X00T and 8X10T Series*
- *8X20T Series*
- *9X00T and 9X20T Series*
- *8X30T and 9X30T Series*

To prevent the vehicle's steering system from throwing steering codes when the AutoSteer system is installed, it is necessary to connect a grounding wire to the external case of the vehicle's Steering Control Unit (SCU) module. This grounding wire allows the AutoSteer SA Module to share a common ground with the vehicle's steering system. The SCU is located on the rear of the machine on all series. However, the location on the back of the machine has changed from one series to the next. Follow the instructions provided for the model the where the AutoSteer system is being installed.

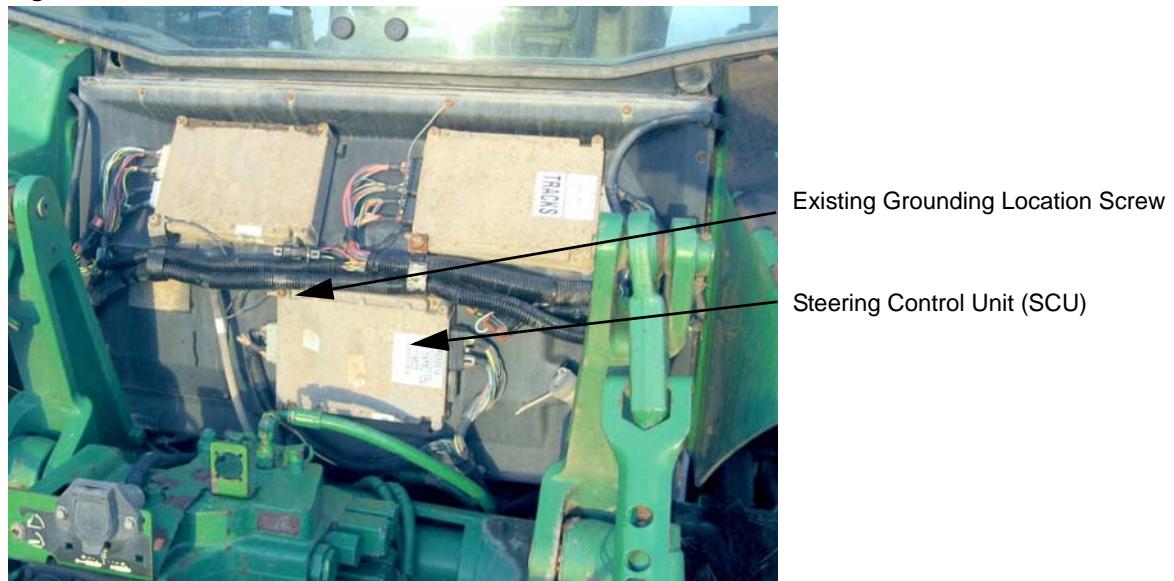
Note: Before attaching the grounding wire to the Steering Control Unit (SCU), ensure the metal in the area the connector is going to contact is clean and free of rust to ensure a solid connection.

Note: The figures in this document show the location of the SCU in the most common locations. However, it is possible that some vehicles will have an alternative location. If the vehicle the system is being installed on does not match the figure shown, determine which of the controllers is the SCU module by finding the correct label on the device or contacting a John Deere service representative for information.

8X00T and 8X10T Series

1. Locate the SCU on the rear of the vehicle as shown in *Figure 5-26*.

Figure 5-26 Control Unit Locations

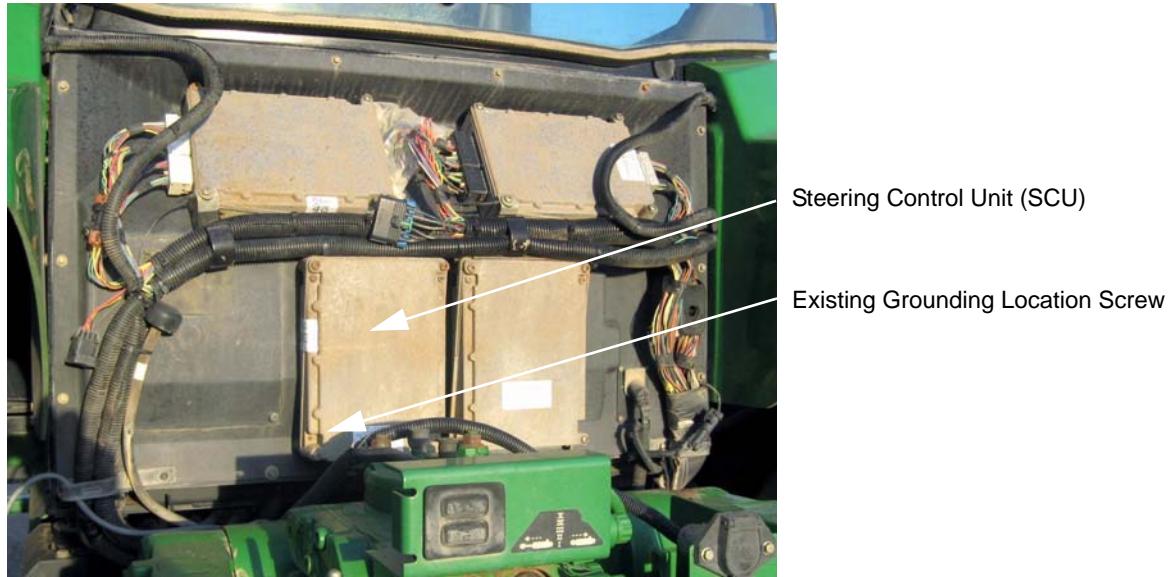


2. Route the SA Module Harness's "Ground" cable towards the screw on the upper left side of the SCU that holds it to the back of the vehicle and the existing vehicle grounding cable. See *Figure 5-26*.
3. Remove the screw with a #3 Phillips screwdriver.
4. Clean the area on the SCU housing from dirt and rust where the screw comes in contact with it.
5. Attach the "Ground" connector to the SCU and secure with the screw that was removed in Step 3.

8X20T Series

1. Locate the SCU on the rear of the vehicle as shown in *Figure 5-27*.

Figure 5-27 Control Unit Locations

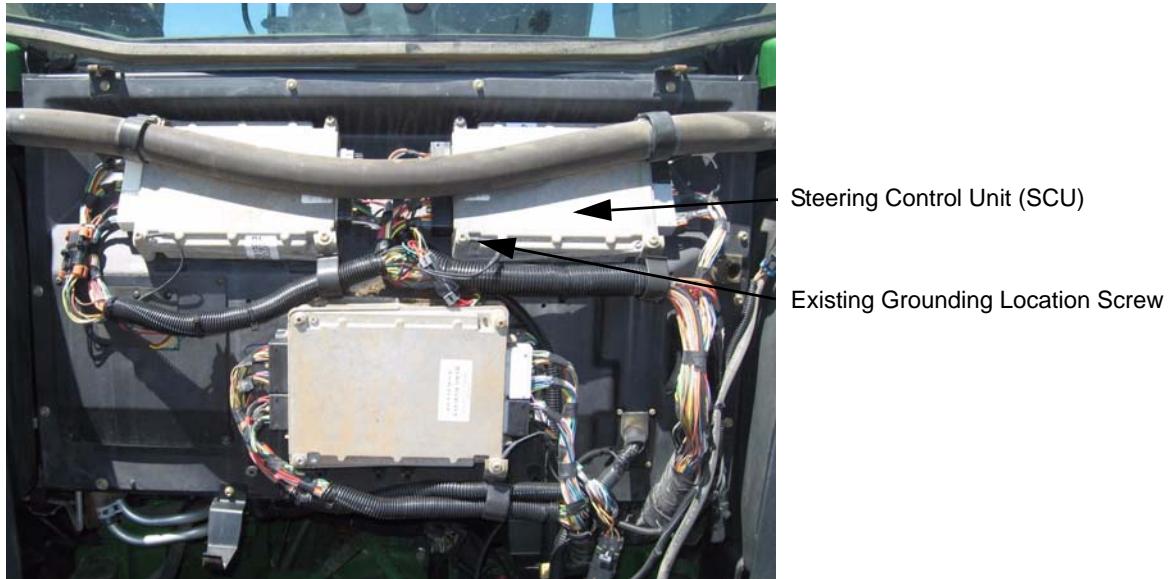


2. Route the SA Module Harness's "Ground" cable towards the screw on the lower left side of the SCU that holds it to the back of the vehicle and the existing vehicle grounding cable. See *Figure 5-27*.
3. Remove the screw with a #3 Phillips screwdriver.
4. Clean the area on the SCU housing from dirt and rust where the screw comes in contact with it.
5. Attach the "Ground" connector to the SCU and secure with the screw that was removed in Step 3.

9X00T and 9X20T Series

1. Locate the SCU on the rear of the vehicle as shown in *Figure 5-28*.

Figure 5-28 Control Unit Locations



2. Route the SA Module Harness's "Ground" cable towards the screw on the lower left side of the SCU that holds it to the back of the vehicle and the existing vehicle grounding cable. See *Figure 5-28*.
3. Remove the screw with a #3 Phillips screwdriver.
4. Clean the area on the SCU housing from dirt and rust where the screw comes in contact with it.
5. Attach the "Ground" connector to the SCU and secure with the screw that was removed in Step 3.

8X30T and 9X30T Series

The SCU on the 8X30T and 9X30T are located in the same place. However, the rear compartments of both series look slightly different. For simplicity, this installation manual only shows the controller compartment of the 8X30 series. Follow the same procedure for both series and disregard any differences the pictures show.

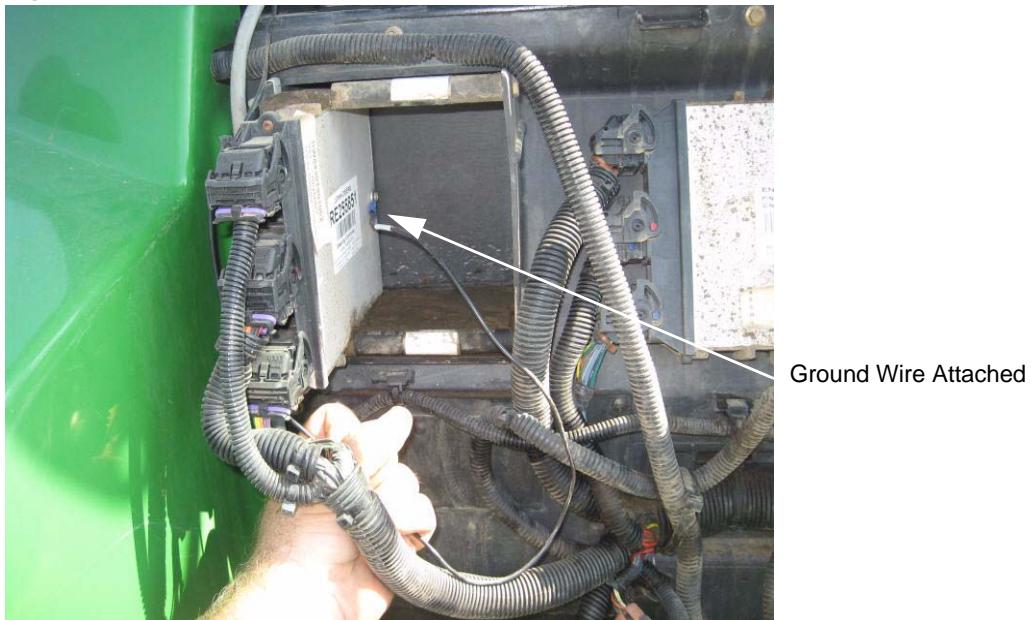
1. Locate the SCU on the rear of the vehicle as shown in *Figure 5-29*.
2. Route the SA Module Harness ground cable towards the vehicle's SCU.
3. Remove the grounding screw on the SCU with a T15 bit socket and ratchet. See *Figure 5-29*.

Figure 5-29 Removing Grounding Screw



4. Attach the SA Module grounding cable to the SCU using the screw removed in Step 3 and an M8 flat washer (from the kit).
5. Tighten the screw and grounding wire securely. See *Figure 5-30*.

Figure 5-30 SA Module Ground Wire Attached



Main Cable Harness

This **Main Cable Harness** section contains the following sub-sections:

- *Roof Module*
 - *All models*
 - *8X00T, 8X10T, and 8X20T Series*
 - *8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*
- *Main Cable Harness Connections Inside Cab*
- *SA Module Harness*
 - *8X00T, 8X10T, and 8X20T Series*
 - *8X30T Series*
 - *9X00T, 9X20T, and 9X30T Series*

Roof Module

This **Roof Module** section contains the following sub-sections:

- *All models*
- *8X00T, 8X10T, and 8X20T Series*
- *8X30T Series*
- *9X00T, 9X20T, and 9X30T Series*

All models

Depending on the vehicle series, the Main Cable Harness will need to be routed differently into the back of the cab through the wire access port. First perform the steps in this section and then follow the instructions in the relevant series section for the vehicle where the AutoSteer system is being installed.

1. Attach the Main Cable Harness to the Roof Module. See *Figure 5-31*.

Orient the 12-pin connector so the word “TOP” on the cable connector is pointing upwards (towards the sky). Insert the cable connector into the Roof Module. Push the connector in until it “clicks” and locks in place. To remove, grasp the connector to compress the two side latches and pull away from the Roof Module.

Note: Do not force the connector. If the connector does not engage easily, check for the correct orientation of the connector.

Figure 5-31 Roof Module Main Cable Harness Connection



2. Attach the LAN connector to the Roof Module. See *Figure 5-32*.

Orient the Ethernet cable connector with the connector under the receiver so the contacts on the cable connector are pointing towards the back of the vehicle. (This will usually be towards your right side if you are standing on the left side of the vehicle and looking towards the Roof Module.) Slide the cable connector into the receiver and rotate the plastic bayonet sleeve clockwise to lock the connector. The bayonet sleeve will “click” when it fully engages and locks. To remove the cable, rotate the bayonet sleeve counterclockwise until it “clicks” and pull the connector down or away from the Roof Module.

Note: Do not force the connector. If the connector does not engage easily, check for the correct orientation of the connector.

Figure 5-32 Roof Module Ethernet Connection



Main Cable Harness

3. Use cable ties to secure the Main Cable Harness to the Roof Rail using the holes drilled into the back of the Roof Rail. See *Figure 5-33*.

Note: Do not attach the cable ties around the top or bottom parts of the Roof Rail as this will prevent the Roof Module from freely sliding along the Roof Rail when it is installed and removed.

Figure 5-33 Cable Ties on Roof Module Bracket Rail



4. Route the Main Cable Harness down the right rear cab support.

5. Attach the Main Cable Harness on top of the roof, to the top window bracket bolt, and to the bottom window bracket bolt with the metal wire clips provided with installation kit. See *Figure 5-34*.

Figure 5-34 Main Cable Harness Routed Down Cab Rear Support



6. Use an 8mm socket and ratchet for the bolt on top of the cab and a 10mm socket and ratchet for the two window bracket bolts.

Note: Depending on the vehicle series, the Main Cable Harness will need to be routed differently into the back of the cab through the wire access port. Follow the instructions in the relevant series section for the vehicle where the AutoSteer system is being installed.

8X00T, 8X10T, and 8X20T Series

1. Leave a loop of cable outside the cab to allow the back window to close.
2. Feed the Main Cable Harness into the cab through the right wire access port.
3. If necessary, cut a slit in the rubber grommet and then replace.

8X30T Series

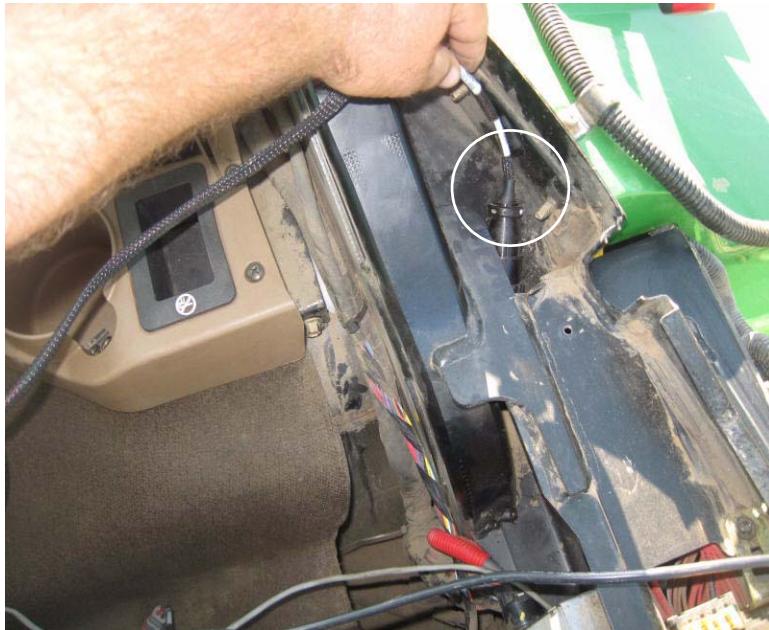
1. Attach the Main Cable Harness to the top of the fender with a metal wire clip. Use the #3 Phillips screwdriver. See *Figure 5-35*.

Figure 5-35 Attach Main Cable Harness to Fender



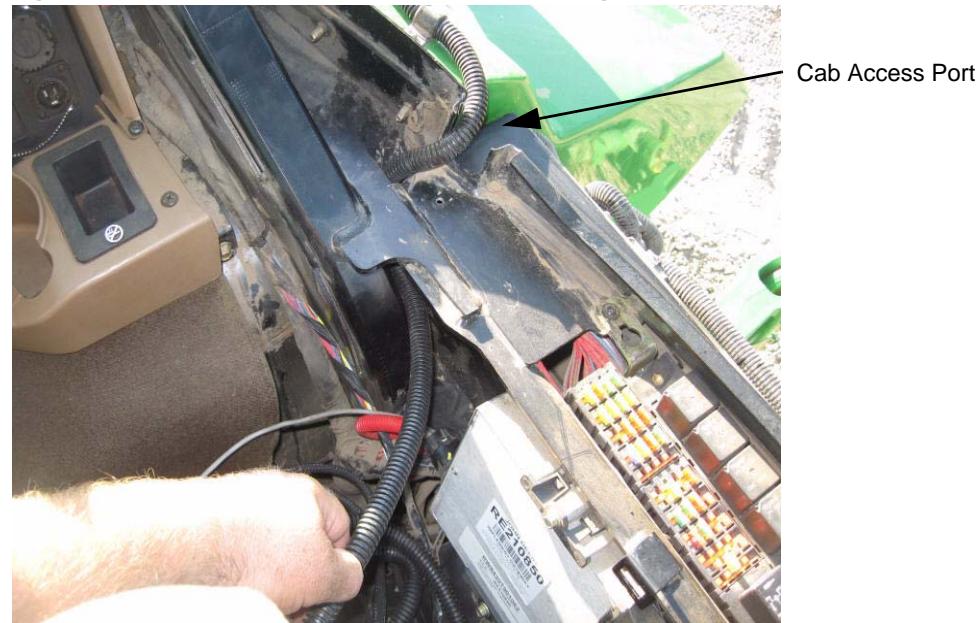
2. Starting with the power connector, feed all the Main Cable Harness connectors through the space on the outside of the cab, under the tubing, and into the space behind the seat. See *Figure 5-36*.

Figure 5-36 Routing Main Cable Harness Into the Frame



3. Pull all the excess Main Cable Harness into the cab and route the cable through the cab access port. See *Figure 5-37*.

Figure 5-37 Pull Excess Main Cable Harness Through Cab Frame



Main Cable Harness

4. Route the SA Module data and power connectors behind the existing controller box from the right side to the left (left to right if facing backwards) where the SA Module is mounted. See *Figure 5-38*.

Figure 5-38 Routing Main Cable Harness Connectors to SA Module



5. Route the SA Module Harness's "Armrest Switch" cable from the left side of the cab to the right behind the controller where the SA Module data and power cables were just passed.
6. Gather the SA Module Harness's "Armrest Switch" cable and the Main Cable Harness's Vehicle Power, Display Comm, and Display Eth cables out the far right side (left side if facing backwards) of the compartment. See *Figure 5-39*.

Figure 5-39 Route External Switch and Main Cable Harness



9X00T, 9X20T, and 9X30T Series

1. Route the Main Cable Harness beneath the fender and above the fuel tank towards the back panel area. See *Figure 5-40*.

Figure 5-40 Route Cable Under Fender

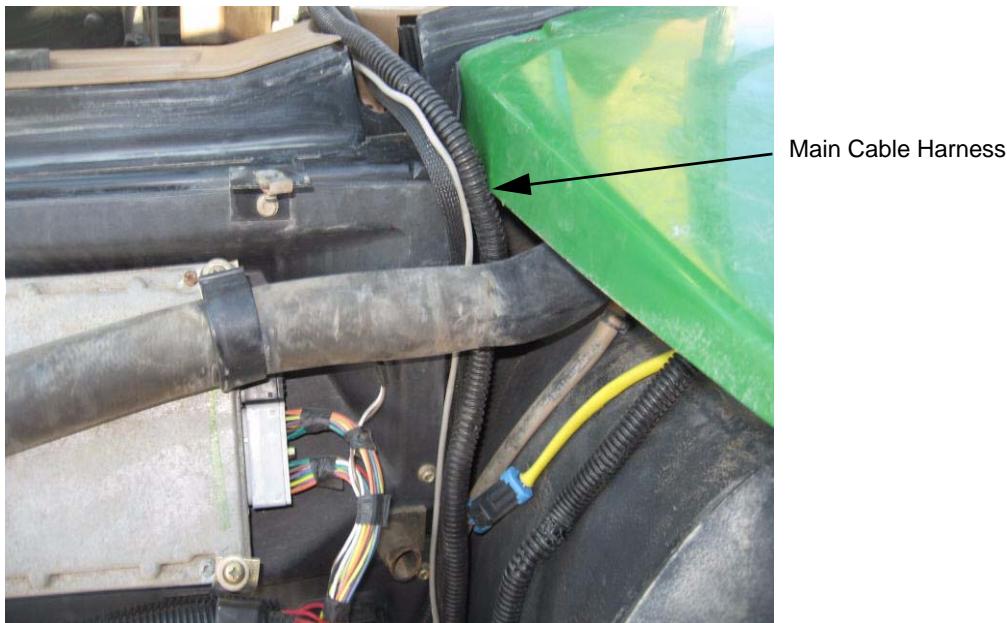


Main Cable Harness

2. Route all the connectors except the SA Module data and power cables behind the fuel vent line and then up into the right side of the cab. See *Figure 5-41*.

Note: The picture shows the back of a 9X20 Series vehicle. The 9X30 Series is slightly different. The picture also shows the SA Module Harness's "Armrest Switch" cable being led into the cab. This harness connection is optional.

Figure 5-41 Route Cables Into Cab



3. Allow the SA Module data and power cables to lead down the back of the vehicle for now.

- Pull 6 inches (15cm) of the Main Cable Harness into the cab and then replace the grommet. See *Figure 5-42*.

Figure 5-42 Cab Feedthrough Grommet Replaced



Main Cable Harness Connections Inside Cab

Figure 5-43 shows the Main Cable Harness connections used inside the cab. *Table 5-1* shows the functions of the Main Cable Harness cab connectors. Refer to your Display user manual for instructions on connecting the Main Cable Harness connections shown to the correct ports and harnesses on the Display and Display cables.

Main Cable Harness

Figure 5-43 Main Cable Harness Cab Connections

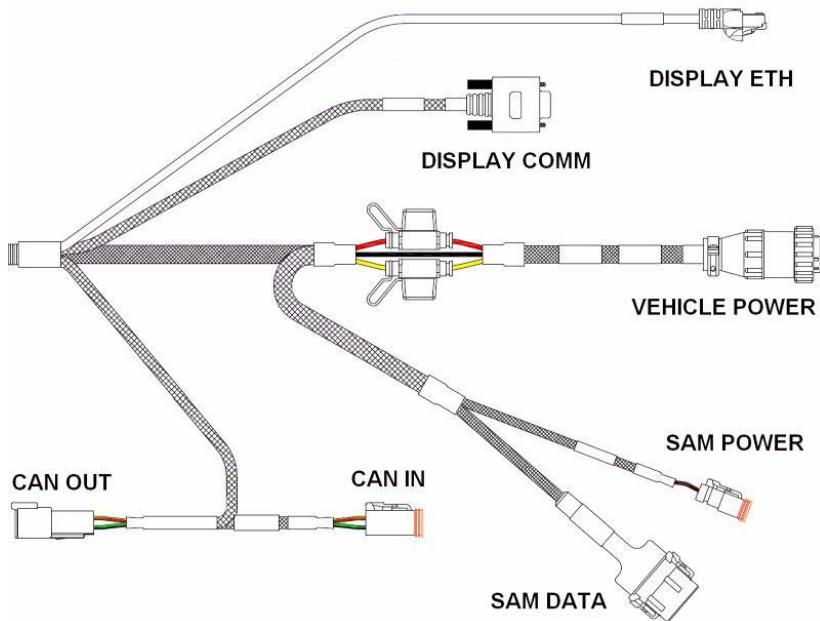


Table 5-1 Cab Main Cable Harness Connector Functions

Main Cable Harness Connector	Connector Function
DISPLAY ETH	Display Ethernet Port (RJ-45)
DISPLAY COMM	Display Communication Port (DB-9)
VEHICLE POWER	12 Volt Power Supplied by Display Harness
SAM POWER	Power for SA Module
SAM DATA	Data for SA Module
CAN IN	Not Used for This Installation
CAN OUT	Not Used for This Installation

SA Module Harness

This **SA Module** section contains the following sub-sections:

- *8X00T, 8X10T, and 8X20T Series*
- *8X30T Series*
- *9X00T, 9X20T, and 9X30T Series*

8X00T, 8X10T, and 8X20T Series

1. Route the SA Module Harness's "Data In" and "Power In" connector behind the seat to the right side of the cab below the air conditioning channel and then up to the Main Cable Harness.
2. Connect the SA Module Harness's "Data In" to the Main Cable Harness's "Data Out" connector.

Note: The SA Module Harness's "Power Out" connection is not used in this installation.

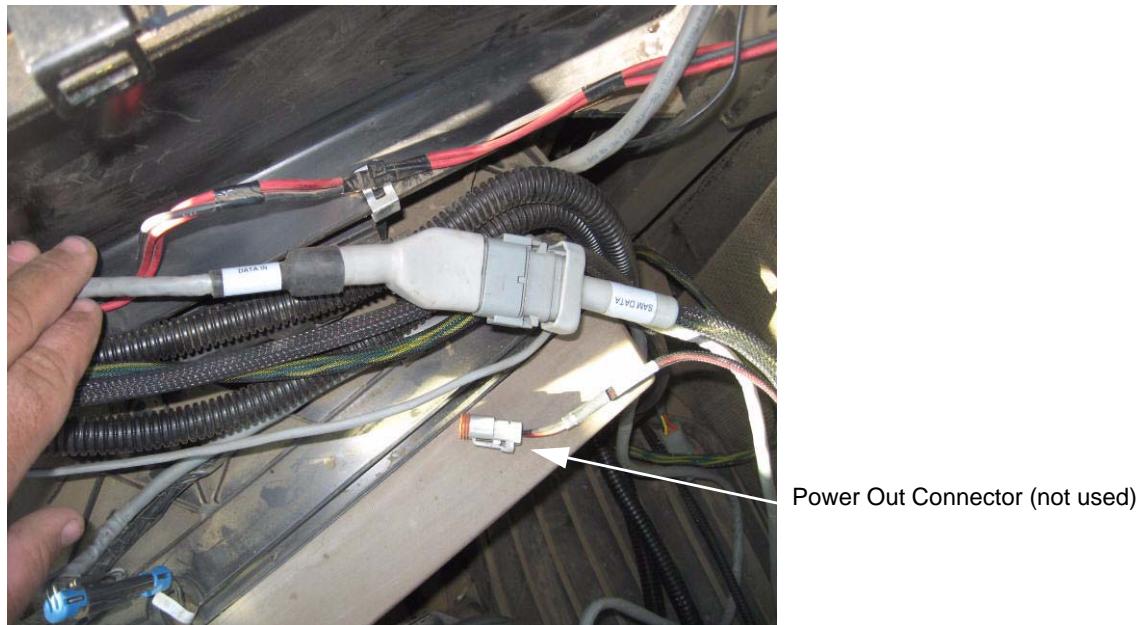
3. Neatly coil any excess cable in the cab. Secure all cables with cable ties.
4. Replace the rear access panel.

8X30T Series

1. Attach the Main Cable Harness "Data Out" connector to the SA Module harness "Data In" connector. See *Figure 5-44*.

Note: The SA Module power out connector on the Main Cable Harness is not used in this installation.

Figure 5-44 Main Cable Harness and SA Module Harness Data Connection



Main Cable Harness

2. Neatly coil the excess cable and secure with a zip tie. Carefully flatten the wires next to the side of the compartment. See *Figure 5-45*.

Figure 5-45 Bundling and Securing Cables



3. Carefully replace the rear panel. See *Figure 5-46*.

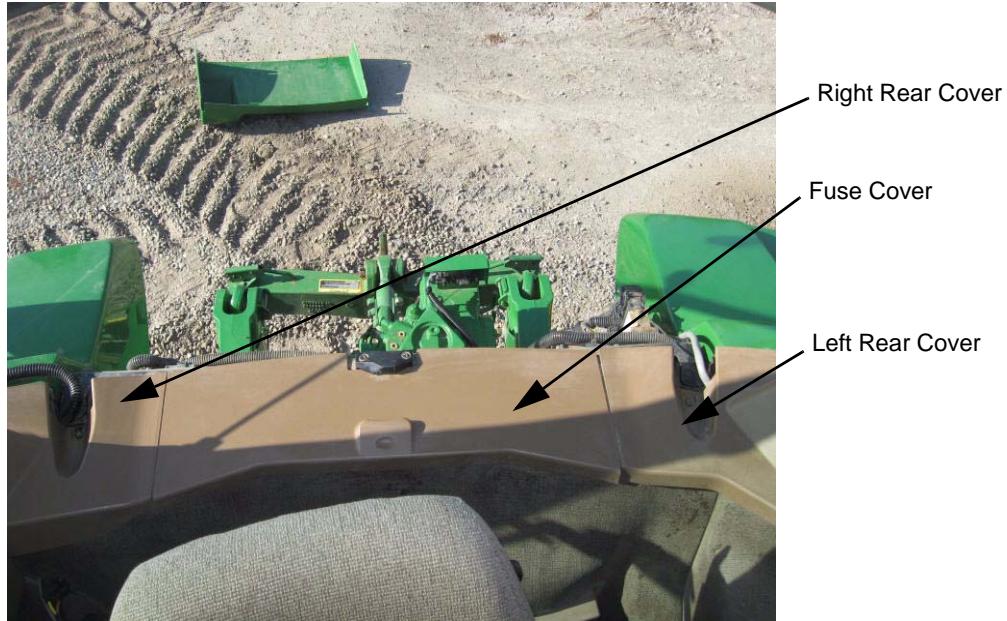
Note: Take care to get the SA Module Harnesses neatly tucked behind it. Allow cables gathered in last step to sit inside the cab.

Figure 5-46 Replacing Rear Panel



- Replace both the left and right rear covers and then replace the fuse cover. See *Figure 5-47*.

Figure 5-47 Replace Rear Covers and Fuse Cover



- Neatly coil any excess cable in the cab. Secure all cables with zip ties.

Main Cable Harness

6. Replace the two rubber grommets. See *Figure 5-48*.

Note: If necessary to feed the cables through, cut a slot in the two rubber grommets.

Figure 5-48 Replace Feedthrough Grommets



7. Replace the rear cover. See *Figure 5-49*.

Figure 5-49 Rear Vehicle Cover Replaced

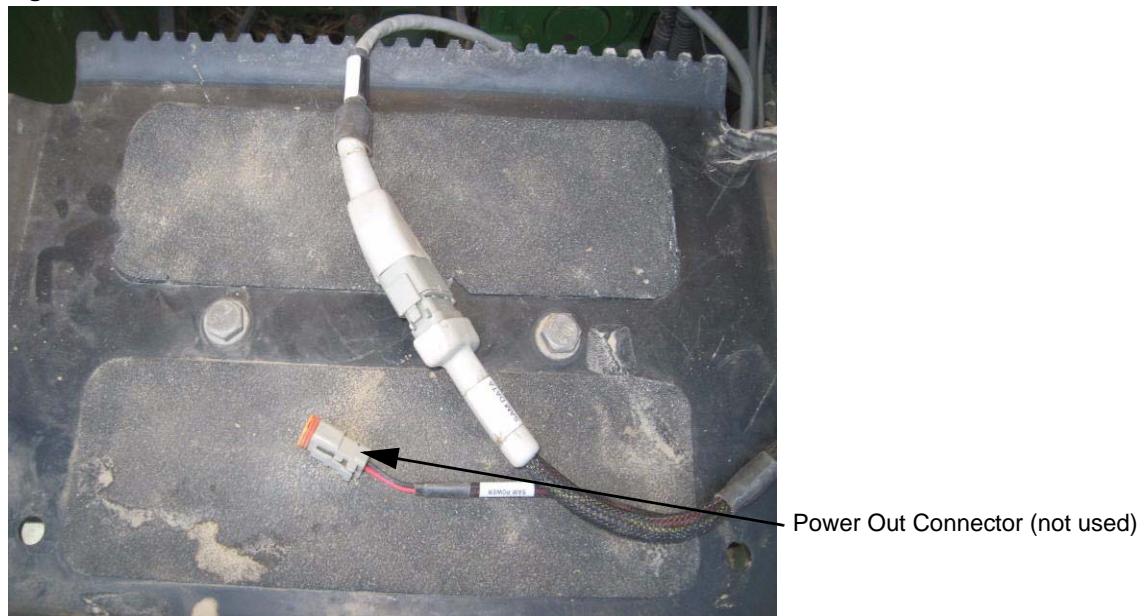


9X00T, 9X20T, and 9X30T Series

1. Attach the Main Cable Harness “Data Out” connector to the SA Module harness “Data In” connector. See *Figure 5-50*.

Note: The SA Module power out connector on the Main Cable Harness is not used in this installation.

Figure 5-50 Main Harness to SA Module Harness Connection

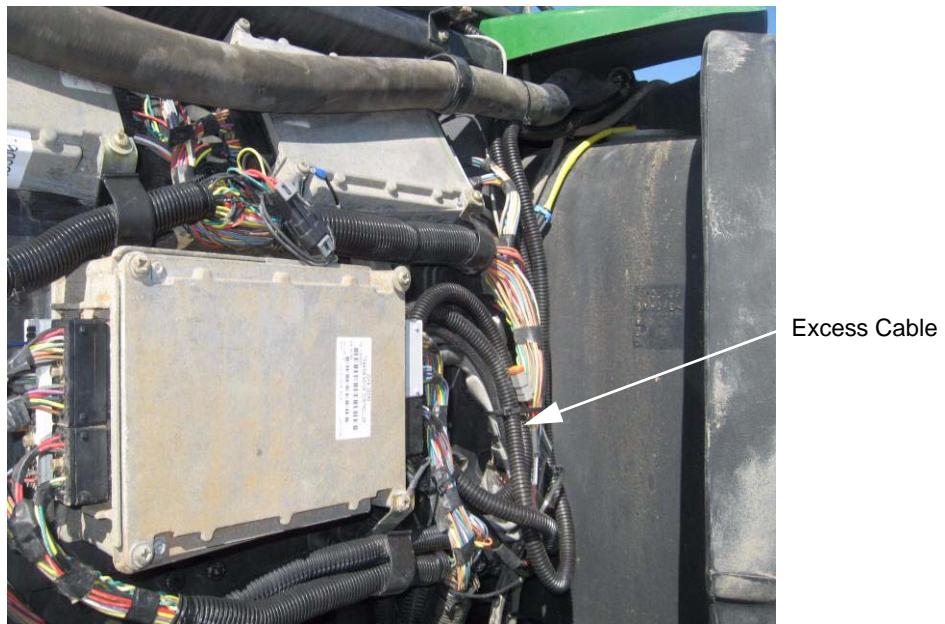


Main Cable Harness

2. Neatly coil the excess cable and secure with a cable tie. See *Figure 5-51*.

Note: *Figure 5-51* shows the back of a 9X20 model vehicle. The 9X30 series will appear different.

Figure 5-51 Securing Excess Cable



3. Replace the rear cover. See *Figure 5-52*.

Figure 5-52 Vehicle Rear Cover Replaced



Power Supply Connection

The following sub-sections describe basic instructions for connecting the AutoSteer system to available vehicle power sources:

- *Cab Power Connection*
- *Battery Power Connection*

Note: Refer to your Display user manual before connecting the AutoSteer system to vehicle power.

The AutoSteer Main Cable Harness must be connected to a 3-pin 12V power source. Your Display user manual provides specific instructions for connecting power to the AutoSteer system and specifies the appropriate vehicle power source.

Cab Power Connection

1. Locate the 12V power outlet at the rear of the side console on the right side of the cab. See *Figure 5-53*.
2. Use this 12V accessory power connector only if the Display user manual specifies connecting to power inside the cab.

Figure 5-53 Cab 12V Power Outlet



Battery Power Connection

The following sub-sections describe basic instructions for connecting the AutoSteer system to available vehicle power sources:

- *8X00T, 8X10T, 8X20T, and 8X30T Series*
- *9X00T, 9X20T, and 9X30T Series*

8X00T, 8X10T, 8X20T, and 8X30T Series

1. Locate the vehicle battery compartment at the front of the vehicle under the radiator space. See *Figure 5-54*.
2. Remove the three bolts holding the side panels to access the battery.
3. Connect to the vehicle battery only if the Display user manual specifies a direct battery connection.

Figure 5-54 Vehicle Battery Location



Note: A battery cable is provided with the AutoSteer system when a direct battery connection is required.

9X00T, 9X20T, and 9X30T Series

1. Locate the vehicle battery compartment on the right side of the machine next to the cab. See *Figure 5-55*.
2. Connect to the vehicle battery only if the Display user manual specifies a direct battery connection.

Figure 5-55 Vehicle Battery Location



Note: A battery cable is provided with the AutoSteer system when a direct battery connection is required.

Post-Installation Procedures and Information

The **Post-Installation Procedures and Information** chapter provides information in the following sections:

- *Create New Vehicle*
- *Calibration and Tuning Guidelines*

Once the entire AutoSteer system, including the Display and Display harnesses, have been installed on the vehicle, the procedures and notes provided in this chapter must be followed to complete the installation and prepare the vehicle for full AutoSteer capabilities.

Create New Vehicle

Once the entire system has been installed, the operator must first create a new vehicle profile. This configures the system so the User display can properly communicate with the various sensors and components on the vehicle. Follow the procedure below to create a new vehicle.

1. Make sure the User display is not powered ON.
2. Start the vehicle and take it to a clear area (such as an open field) where it can be calibrated.
3. Power up the AutoSteer system.
4. Follow the instructions provided in the Display user manual to create a new vehicle.

Calibration and Tuning Guidelines

Note: For optimal steering performance, the AutoSteer system must be fully calibrated and then tuned.

AutoSteer should kick-out when the driver turns the steering wheel while in AutoSteer mode. If AutoSteer does not disengage when you turn the steering wheel, adjust the **Override** limit so that it does.

Final Checklist

This **Final Checklist** chapter contains the verifications steps necessary after the installation of the AutoSteer system.

Note: The Final Hardware Installation Checklist is on the back of this page. Fill in the checklist after the installation. You should keep a copy of this checklist for future reference when servicing the AutoSteer system.

Machine Model: _____ Year: _____ Serial #: _____

Customer Name: _____

Location/Address: _____

AutoSteer Installation Kit Part Number: _____

NOTES

Name of Installer: _____ Date: _____

System Installation Checklist

1. Display Bracket installed and all fasteners are tight.
2. Roof Rail and Roof Module are installed and all fasteners are tight.
3. SA Module is installed and all fasteners are tight.
4. All cable ends are connected.
5. All cables are secured with cable ties.

AutoSteer Performance Checklist

1. Complete the AutoSteer system calibration.
2. Complete the AutoSteer system tuning.
3. Line acquisition is good.
4. On-line steering is good.
5. Manual override (kick-out) is working.

Note: See the *Post-Installation Procedures and Information* chapter for additional information.
